# APPENDIX A

# PROJECT PLANS

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR

HESPERIA, CA 92585

## SYMBOL LEGEND

ELEVATION IDENTIFICATION
- ELEVATION DESIGNATION
- SHEET REFERENCE NO.

ENLARGED DETAIL IDENTIFICATION
- DETAIL DESIGNATION
- SHEET REFERENCE NO.

PARTIAL SECTION IDENTIFICATION
- SECTION DESIGNATION
- SHEET REFERENCE NO.

SECTION DETAIL IDENTIFICATION
- DETAIL DESIGNATION
- SHEET REFERENCE NO.

INTERIOR ELEVATION IDENTIFICATION
- ELEVATION DESIGNATION
- DETAIL DESIGNATION
- SHEET REFERENCE NO.

ELEVATION REFERENCE IDENTIFICATION
- 0'-0" FINISH FLOOR — SECTION / ELEVATION / FLOOR DATUM

PROJECT REFERENCE
- NORTH ARROW

GRID LINE IDENTIFICATION
- GRID LINE
- FACE OF STUD
- FACE OF MASONRY
- CENTER LINE OF COLUMN

CEILING IDENTIFICATION
- MATERIAL DESIGNATION
- HEIGHT REFERENCE
- NOTE

ROOM IDENTIFICATION
- ROOM NAME
- MATERIAL FINISH
- WALL BASE FINISH

PROJECT SYMBOL IDENTIFICATION
- DOOR NUMBER
- WINDOW NUMBER
- MATERIAL NAME / FINISH NAME
- WALL TYPE
- FIXTURE / EQUIPMENT TYPE
- GRAPHIC NAME

PROJECT ANNOTATION IDENTIFICATION
- REVISION / ADDENDUM NUMBER
- KEYNOTE NUMBER

## PROJECT INFORMATION

CURRENT CODES

| | |
|---|---|
| BUILDING CODE | 2022 CALIFORNIA BUILDING CODE (CBC) |
| PLUMBING CODE | 2022 CALIFORNIA PLUMBING CODE (CPC) |
| MECHANICAL CODE | 2022CALIFORNIA MECHANICAL CODE (CMC) |
| ELECTRICAL CODE | 2022 CALIFORNIA ELECTRICAL CODE (CEC) |
| ENERGY CODE | 2022 CALIFORNIA ENERGY CODE |
| FIRE / LIFE SAFETY CODE | 2022 CALIFORNIA FIRE CODE (CFC) |

CALIFORNIA CODE OF REGULATIONS (CCR)
TITLE 19: TITLE 24, CAC, CBC, CEC, CMC, CPC, CFC 2022 EDITION

ACCESSIBILITY

THESE PLANS ARE INTENDED TO COMPLY WITH ALL OF THE PROVISIONS SET FORTH BY CHAPTER 11B OF THE 2019 CBC AND THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

## SHEET INDEX

| | | REVISIONS A | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| ARCHITECTURAL | 001 T1.1 TITLE SHEET, PROJECT INFORMATION, AND GENERAL NOTES | | | | | |
| | 002 AS1 PROPOSED SITE PLAN | | | | | |
| | 003 A1 BUILDING 1 AND 2 WAREHOUSE FLOOR PLAN | | | | | |
| | 003 A1.1 BUILDING 1 AND 2 WAREHOUSE ROOF PLAN | | | | | |
| | 004 A2 BUILDING 1 AND 2 ELEVATIONS | | | | | |
| | 005 A3 BUILDING 1 AND 2 COLORED ELEVATIONS | | | | | |

## LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

**PARCEL A: (APN: 3064-591-17)**
PARCEL 1 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

**PARCEL B: (APN: 3064-591-18)**
PARCEL 2 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

**PARCEL C: (APN: 3064-591-12)**
THE EAST 1/2 OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

**PARCEL D: (APN: 3064-591-13)**
THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

**PARCEL E: (APN: 3064-631-01)**
THAT PORTION OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND ON FILE IN THE DISTRICT LAND OFFICE, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID SOUTHWEST 1/4; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID SOUTHWEST 1/4 TO A LINE PARALLEL WITH AND DISTANT 14.00 FEET NORTHWESTERLY, MEASURED AT RIGHT ANGLES, FROM THE NORTHEASTERLY PROLONGATION OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED FROM SIMON FRIEDMAN AND WIFE, RECORDED JANUARY 28, 1949, IN BOOK 2353, PAGE 423, OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE NORTHEASTERLY ALONG SAID PARALLEL LINE TO THE NORTHERLY LINE OF SAID SOUTHWEST 1/4; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.


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2022-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS
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**TRUCK WAREHOUSE**
**SEC THREE FLAGS & POPLAR**
HESPERIA, CA


**CUP# 22-00016**

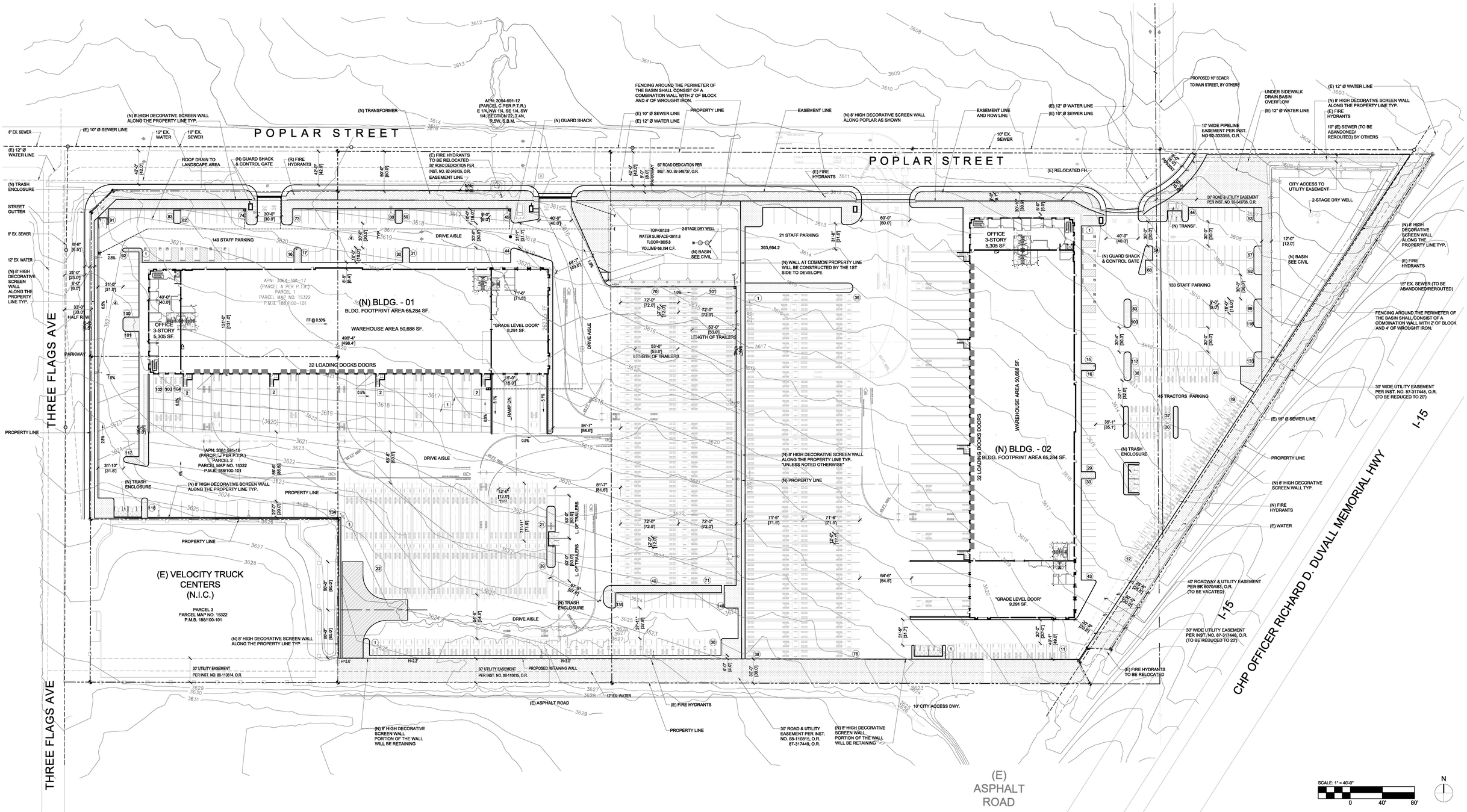
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001
**T1.1**
**COVER SHEET**


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## KEY NOTES

1. CONCRETE RAMP W/ 42" HIGH CONCRETE TILT-UP GUARD WALL OR BUILDING WALL ON BOTH SIDED OF RAMP
2. EXTERIOR CONCRETE STAIR

## TOPO KEY NOTES

1. ABUTTERS RIGHT OF INGRESS AND EGRESS TO OR FROM THE STREET OR HIGHWAY ABUTTING SAID LAND HAVE BEEN RELINQUISHED BY A DOCUMENT RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390 AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, BOTH OF OFFICIAL RECORDS.
2. AN EASEMENT FOR ROAD AND UTILITY PURPOSES RECORDED IN BOOK 6070, PAGE 483 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR ROAD AND HIGHWAY PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317448 OF OFFICIAL RECORDS.
4. AN EASEMENT FOR WATER LINE PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317449 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR WATER LINE, UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED APRIL 15, 1988 AS INST. NO. 88-110815 OF OFFICIAL RECORDS.
6. AN EASEMENT FOR PIPELINE PURPOSES RECORDED AUGUST 11, 1992 AS INST. NO. 92-333355 OF OFFICIAL RECORDS.
7. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349735 OF OFFICIAL RECORDS.
8. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349737 OF OFFICIAL RECORDS.
9. AN EASEMENT FOR ROAD, HIGHWAY AND PUBLIC UTILITY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349738 OF OFFICIAL RECORDS.

## BUILDINGS FLOOR AREA PROPOSED

| | WAREHOUSE | OFFICE | GRADE LEVEL DOOR | TOTAL AREA | BUILDING FOOTPRINT |
|---|---|---|---|---|---|
| BUILDING - 01 | 50,688 S.F. / S | 5,305 S.F. / B (1-STORY=5,305 S.F.) | 9,291 S.F. / S | 75,884 S.F. | 65,284 S.F. |
| BUILDING - 02 | 50,688 S.F. / S | 5,305 S.F. / B (1-STORY=5,305 S.F.) | 9,291 S.F. / S | 75,884 S.F. | 65,284 S.F. |

## PARKING SUMMARY (BUILDING_01)

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE AND GRADE LEVEL AREA (59,979 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. 0.4/1000 FOR AREA AFTER 10,000 | 10,000 S.F. (20 SPACE) | 40 | 149 |
| | | 49,979 S.F. (20 SPACE) | | |
| OFFICE (5,240 S.F.) 3- STORY = 15,720 S.F.) | 1 SPACE / 200 S.F. | 15,915 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | ***119*** | |

TOTAL OVERALL PARKING REQUIRED: ***119 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***149 SPACES***
INCLUDING H/C PARKING 7 SPACES

## PARKING SUMMARY (BUILDING_02)

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE AND GRADE LEVEL AREA (59,979 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. 0.4/1000 FOR AREA AFTER 10,000 | 10,000 S.F. (20 SPACE) | 40 | 154 |
| | | 49,979 S.F. (20 SPACE) | | |
| OFFICE (5,240 S.F.) 3- STORY = 15,720 S.F.) | 1 SPACE / 200 S.F. | 15,915 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | ***119*** | |

TOTAL OVERALL PARKING REQUIRED: ***119 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***133 SPACES***
INCLUDING H/C PARKING 6 SPACES

## SITE PLAN LEGEND

- (E) PROPERTY LINE
- (E) CENTER LINE
- (E) EASEMENT LINE
- (E) FENCE
- FIRE HYDRANT LOCATION TO BY FIRE DEPARTMENT
- (E) TREES

## BUILDING INFORMATION

PROJECT DESCRIPTION: NEW 1 - STORY WAREHOUSE WITH 3 - STORY OFFICE AREA

OCCUPANCY: S / B STORAGE / BUSINESS

CONSTRUCTIONS TYPE: V-A W/ AUTOMATIC FIRE SPRINKLER SYSTEM

| GROSS FLOOR AREA: | WAREHOUSE | OFFICE | SUB - TOTAL |
|---|---|---|---|
| BUILDING - 01 | 58,817 S.F. | 15,720 S.F. | 74,537 S.F. |
| BUILDING - 02 | 13,760 S.F. | | 13,961 S.F. |

TOTAL LOT GROSS AREA: 885,234 SQ. FT. / 20.32 ACRES

WAREHOUSE PROJECT GROSS LOT AREA: 458,255 SQ. FT./ 10.52 ACRES

TRUCK STOP PROJECT GROSS LOT AREA: 426,978 SQ. FT./ 9.8 ACRES

**REQUIRED FIRE RESISTIVE CONSTRUCTION:**

1. 1-HR FIRE BARRIER BETWEEN STORAGE AND B OCCUPANCY (DOOR W/60 MINUTE FIRE RATING)

## SCOPE OF WORK WAREHOUSE

**WAREHOUSE SCOPE:**

NEW SINGLE STORY WAREHOUSE BUILDING WITH 3-STORY OFFICE ON WEST SIDE. TOTAL FLOOR AREA IS 75,884 SF (ACTUAL BUILDING FOOTPRINT IS 65,284 SF. WAREHOUSE TO HAVE 28 ROLL UP DOORS. GRADE LEVEL PORTION TO HAVE 4 ROLL UP DOORS.

SITEWORK CONSISTS OF GRADING/DRAINAGE, COMBINATION OF AC AND CONCRETE PAVEMENT, ALL WET AND DRY UTILITIES, LANDSCAPE PLANTERS THROUGHOUT, TRASH ENCLOSURES PER CITY STANDARDS, PARKING LOT LIGHTING AND STRIPING FOR EMPLOYEE/GUEST AS WELL AS TRUCK PARKING.

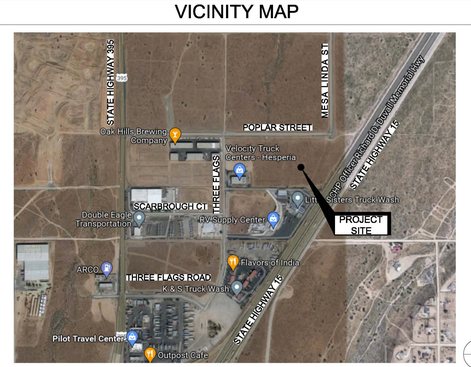
**PARKING PROVIDED: (WAREHOUSE 01)**
EMPLOYEE/GUEST 149 STALLS
TRACTOR/TRAILER 104 SPACES
TRACTOR ONLY 30 SPACES
**PARKING PROVIDED: (WAREHOUSE 02)**
EMPLOYEE/GUEST 154 STALLS
TRACTOR/TRAILER 76 SPACES
TRACTOR ONLY 45 SPACES

TO BE ENTITLED AS A SINGLE PLANNING PROJECT UNDER CUP# 22-00016 BUT CONSTRUCTED IN 2 PHASES.

PHASE 1 - WAREHOUSE 01, RELATED SITEWORK AND ALL STREET IMPROVEMENTS PLUS UTILITY STUBS TO BOTH BUILDINGS

PHASE 2 - WAREHOUSE 02, RELATED SITEWORK.

## VICINITY MAP




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REVISIONS
1. 2022-08-15 PLAN CHECK CORRECTION
2. 2022-10-03 PLAN CHECK CORRECTION
3. 2022-12-22 PLAN CHECK CORRECTION
4. 2024-02-23 FIRE DEPT. CORRECTION

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR
HESPERIA, CA

**CUP# 22-00016**

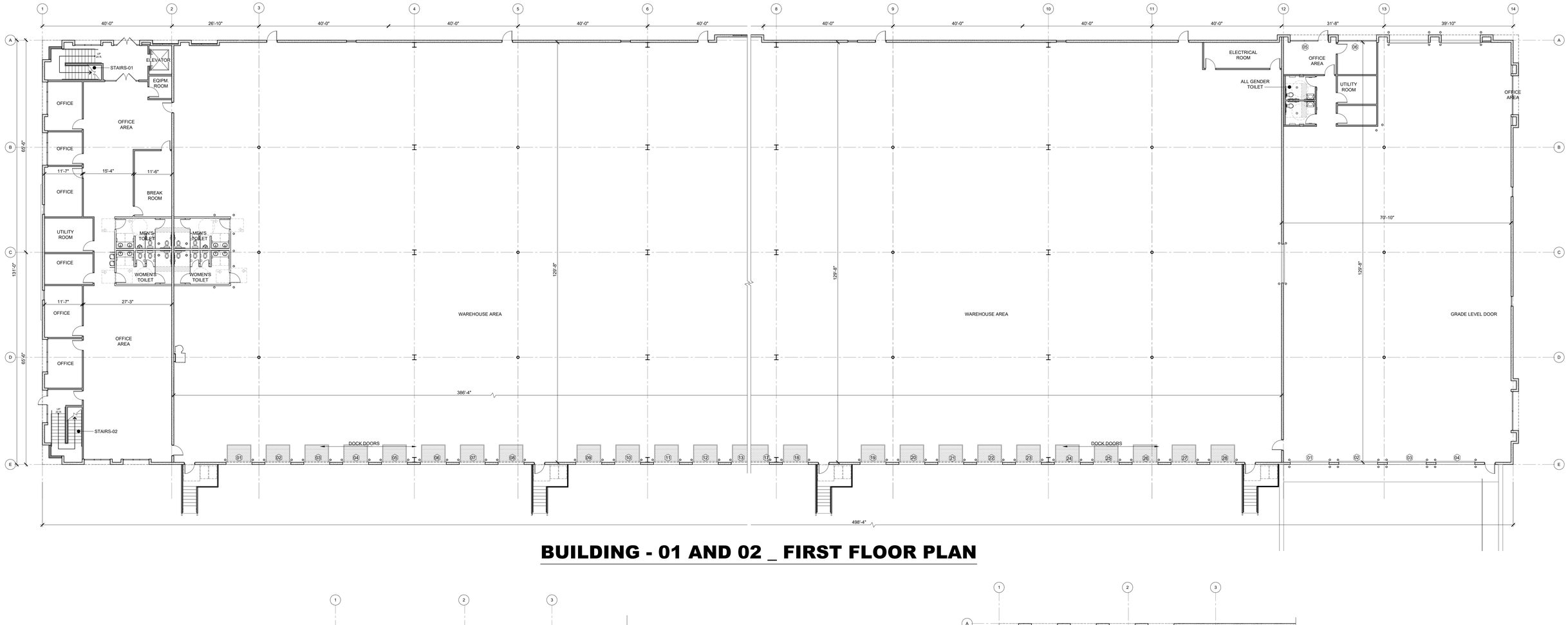
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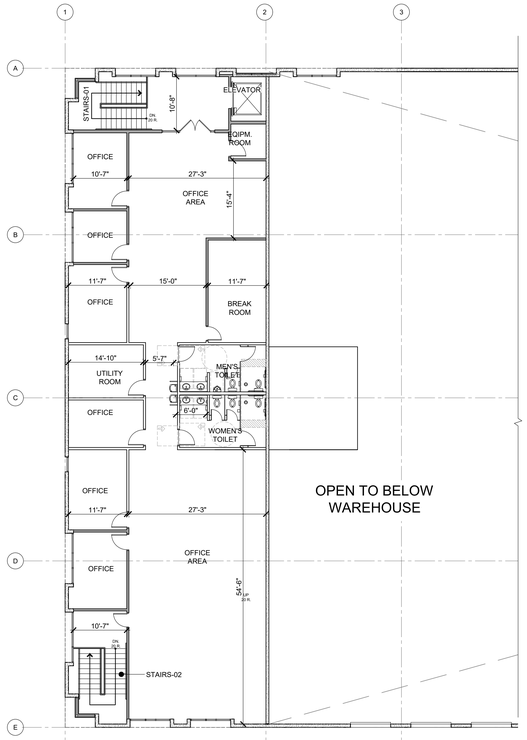
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SITE PLAN

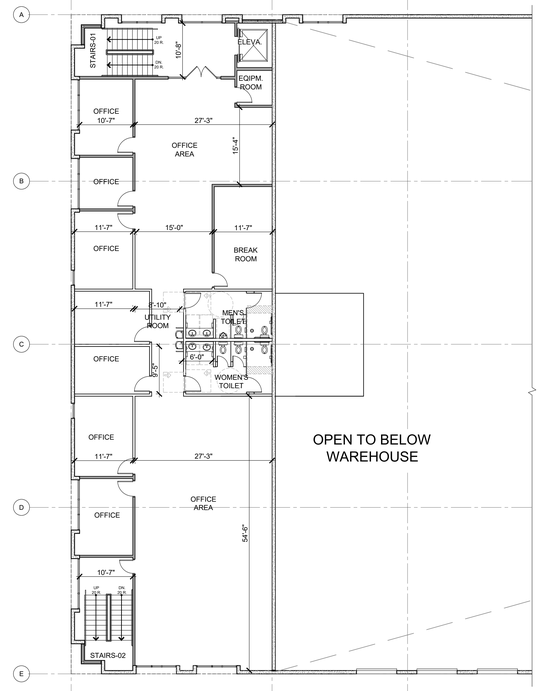
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# BUILDING - 01 AND 02 _ FIRST FLOOR PLAN




# BUILDING - 01 _ 2ND FLOOR PLAN
## BUILDING - 02 _ (SIMILAR)




# BUILDING - 01 _ 3RD FLOOR PLAN
## BUILDING - 02 _ (SIMILAR)

WALL LEGEND

- CONCRETE TILT-UP WALL SEE STRUCTURAL
- INTERIOR 20 GA STEEL STUDS WALL @ 16" O.C.
- 1-HR RATED WALL BETWEEN B AND S OCCUPANCIES

SCALE: 3/32" = 1'-0"

N


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# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR

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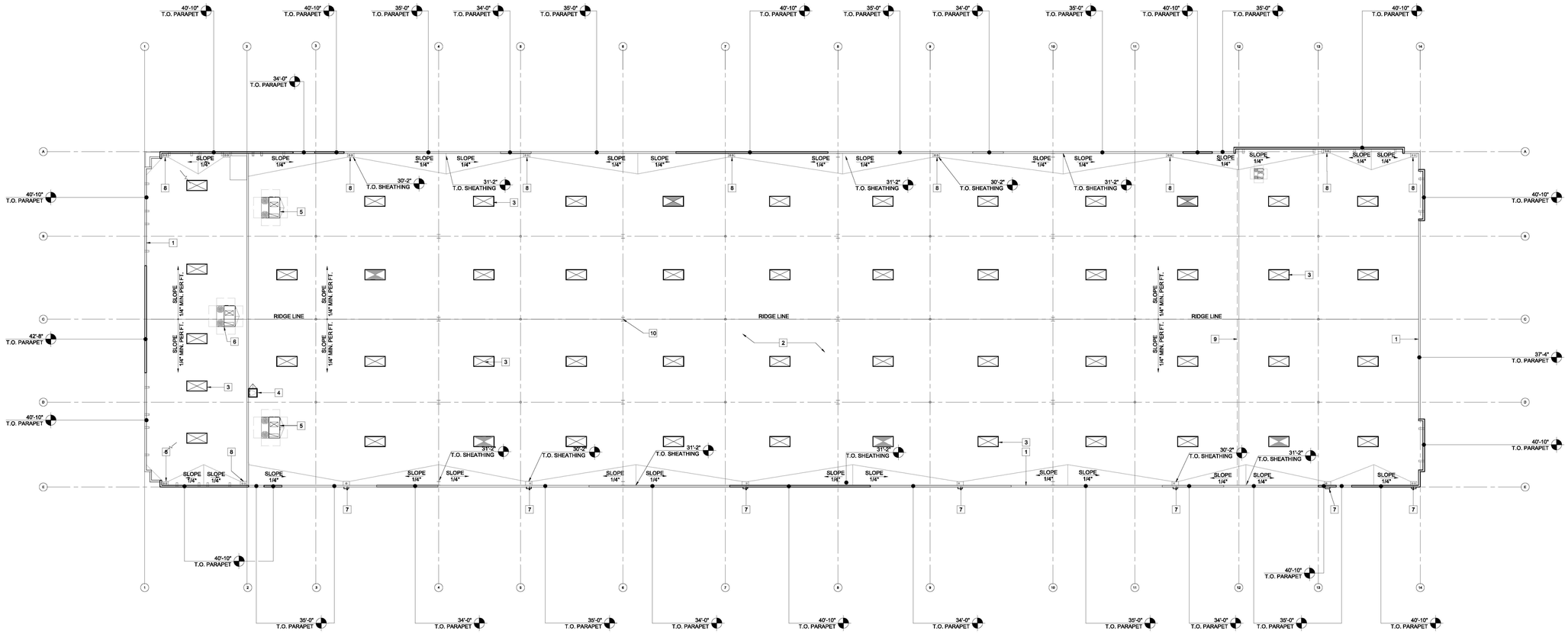

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**FLOOR PLANS**


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ROOF PLAN
1/16" = 1'-0"

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## KEY NOTES

1. CONCRETE PARAPET, SEE "S" DRAWINGS FOR THICKNESS.
2. PROVIDE 4-PLY BUILT-UP ROOFING OVER ROOF SHEATHING OVER ROOF FRAMING. ROOFING TO BE CLASS 1 RATED AND MINIMUM OF 10 YEAR EXTENDED WARRANTY COVERAGE PRODUCT BY GAF MATERIAL CORPORATION OR EQUAL. ORDER OF APPLICATION
   - FIBERGLASS BASE SHEET
   - GAFGLAS 2-PLY
   - GAFGLAS MINERAL SURFACE CAP SHEET

   * CLASS-A BUILT-UP ROOFING APPLICATION PER MANUFACTURES SPECIFICATIONS
3. 4'X8' SMOKE VENT/ SKYLIGHT
4. 30" x 36" ROOF HATCH LOCATION
5. PACKAGE RTU CURB FOR 277/480V AC UNITS (SERVING FOR 1ST AND 2ND FLOOR OFFICE SPACES)
6. PACKAGE RTU CURB FOR 277/480V AC UNITS (SERVING FOR 3RD FLOOR OFFICE SPACES)
7. INTERIOR ROOF DRAIN & OVERFLOW SCUPPERS STUB OUT 5' SEE CIVIL FOR CONNECTION
8. INTERIOR ROOF DRAIN AND OVERFLOW SUMP STUB OUT 5' SEE CIVIL FOR CONNECTION
9. LINE OF WALL BELOW
10. COLUMN BELOW, SEE STRUCTURAL DRAWINGS

NOTE:
ALL MECHANICAL EQUIPMENTS UNDER SEPARATE PERMIT AND PART OF TENANT IMPROVEMENT PROJECT PHASE IA

## SMOKE VENT/ SKYLIGHT

**SMOKE AND HEAT VENT/ SKYLIGHT SIZE: 4' X 8' = 32 S.F.**

BUILDING VOLUME (CU. FT.) / 9000 X SMOKE VENT SIZE = 1,859,840 CU. FT. / 9000 X 32

REQUIRED: 6 EA. SMOKE/ HEAT VENTS
PROVIDED: 6 EA. SMOKE/ HEAT VENTS

**SKYLIGHT SIZE: 4' X 8' = 32 S.F.**

(WAREHOUSE AREA) X 2.0% / (SMOKE VENT SIZE) = 1,185 S.F. / 32 S.F.

REQUIRED: 38 EA. SKYLIGHTS

PROVIDED 46 SMOKE/ HEAT VENTS/ SKYLIGHT COMBINATIONS

SMOKE VENT/ SKYLIGHT COMBINATION:
BRISTOLITE #4898: ES-CMG-1-ESA-1R-HW-MF
#R14504 OR EQ. TO COMPLY W./ IFC/CFC SECTION 910
AND LABELED TO COMPLY WITH UL 793

SKYLIGHT 4'X8' FIBERGLASS
BRISTOLITE #4898: ES-CMG-1-ESA-1R-HW-MF
ICC-ES REPORT NUMBER: ER-2469
COORDINATE EXACT LOCATION TO PREVENT CONFLICT WITH FRAMING, FIRE SPRINKLER LINES, ELECTRICAL CONDUITS AND LIGHTING. SEE STRUCTURAL DWG.

PROVIDE: SMOKE VENT/ SKYLIGHT COMBINATION

1. PROVIDE OUTSIDE MANUAL RELEASE FOR SMOKE VENTS PER FIRE DEPARTMENT REQUIREMENTS.
2. FUSIBLE LINK TEMPERATURE RATING TO BE MINIMALLY ABOVE SPRINKLER HEAD RATING WHEN BUILDING IS EQUIPPED WITH E.S.F.R. SPRINKLER SYSTEM.
3. SMOKE VENT MUST BE UL OR FM LISTED.


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# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR

HESPERIA, CA

**CUP# 22-00016**

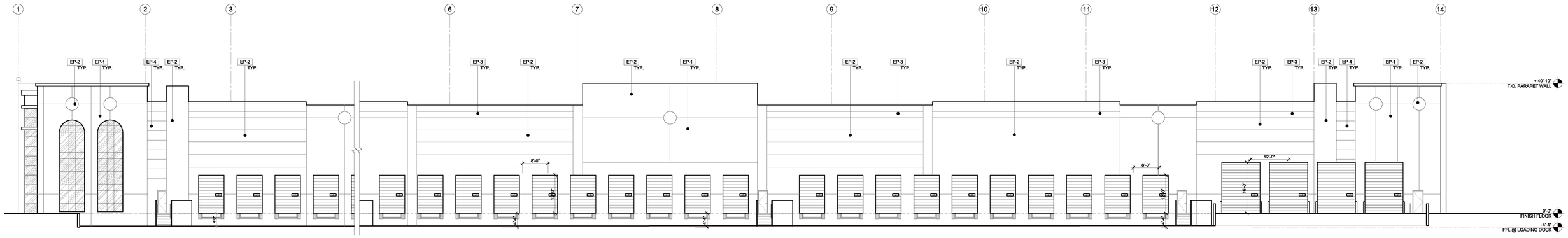
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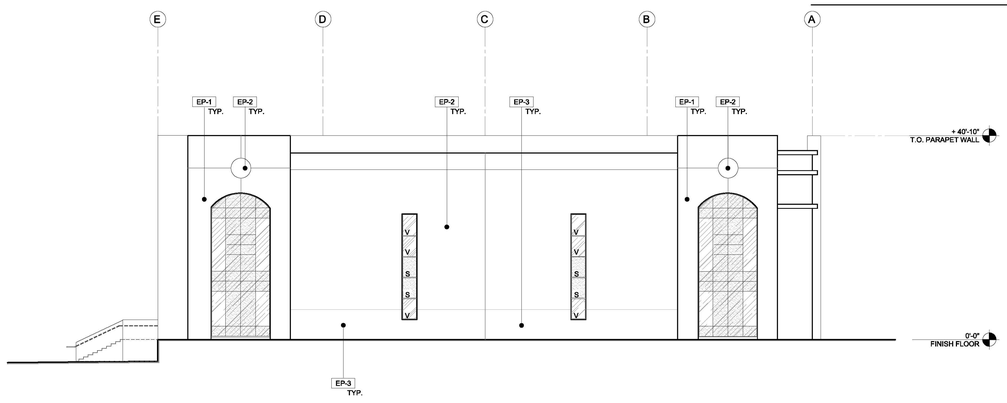

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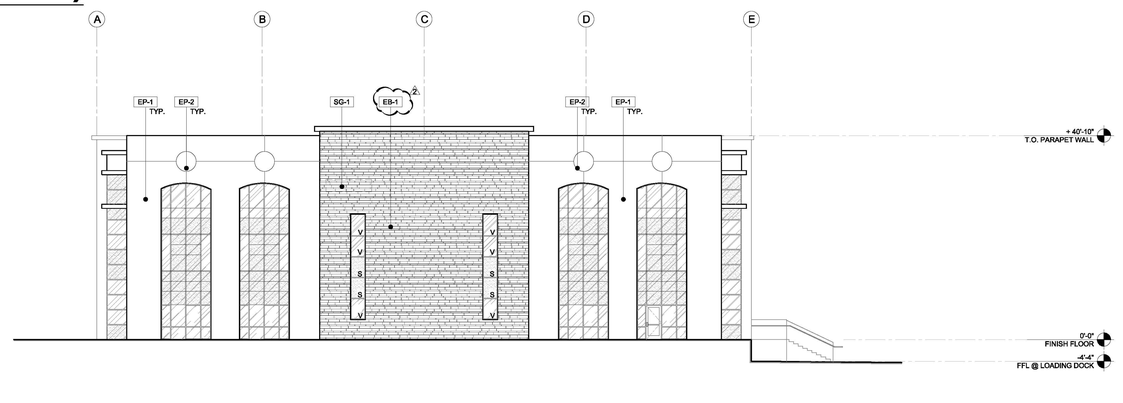

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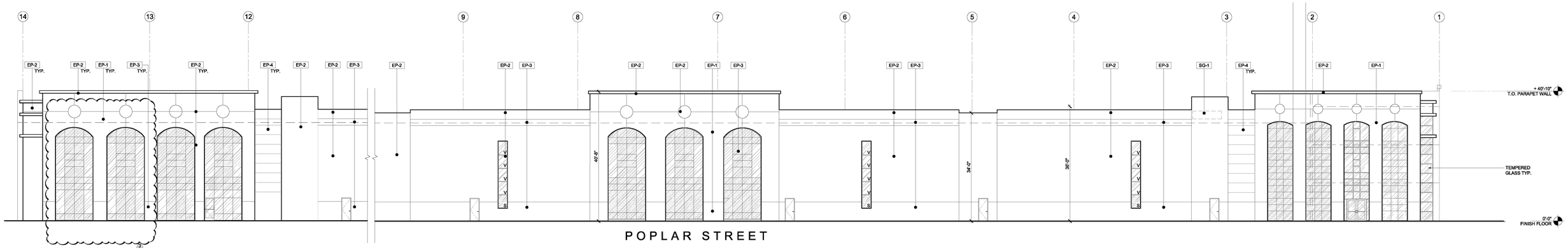

## BUILDING - 01 _ SOUTH ELEVATION (LOADING DOCK)
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ EAST ELEVATION
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ WEST ELEVATION (THREE FLAGS AVE.)
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ NORTH ELEVATION (OFFICE) POPLAR STREET
## BUILDING - 02 (SIMILAR)

### KEYNOTES

1. CONCRETE TILT-UP PANEL (PAINTED) SEE "S" DRAWINGS. FINISH GRADE VARIES SEE "C" DRAWINGS. WATERPROOF ALL WALLS WHERE GRADE IS HIGHER AND EXPOSED TO THE WEATHER ONE SIDE WATERPROOFING TO BE PROTECTED WITH PROTECTION BOARD AND A MIN. OF 6" GRAVEL. PROVIDE TRENCH DRAIN AT BOTTOM AND DAYLIGHT TO CURB OR TAKE TO STORM DRAIN. NOT REQUIRED AT DOCK HIGH CONDITION OR AT RAMP WALLS.
2. PANEL REVEAL. ALL REVEAL TO HAVE A MAX. OF 3/8" CHAMFER. REVEAL COLOR TO MATCH ADJACENT BUILDING FIELD COLOR.
3. OVERHEAD DOOR @ DRIVE THRU. W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
4. OVERHEAD DOOR @ DOCK HIGH W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
5. ALUMINUM STOREFRONT FRAMING WITH TEMPERED GLAZING
6. HALLOW METAL DOOR W/ COMPLETE WEATHER STRIPPING ALL AROUND DOOR TYP.
7. CONCRETE TILT-UP SCREEN WALL.
8. CONCRETE STAIR, LANDING AND METAL PIPE RAILING. PROVIDE NON-SKID NOSING TO MEET ADA REQUIREMENTS.
9. CONCRETE RAMP AND CONCRETE GUARD WALL
10. BUILDING ADDRESS PER FIRE DEPT. REQUIREMENTS. 18" HI. X 2" THK. HIGH DENSITY FOAM "HELVATIC BOLD" LETTER W/ ¼" PVC FACE EPOXY WALL
11. DOCK BUMPER

### LEGEND - EXTERIOR FINISHES

- EP-1 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDUSTRIAL AGE DET618
- EP-2 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" WARM WHITE DEW380
- EP-3 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDIGO NIGHT DEA138
- EP-4 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" SAND DOLLAR DE6171
- SG - 1 SIGNAGE UNDER SEPARATE PERMIT
- EB-1 STONE VENEER - CORONADO PRAIRIE STONE - MOCHA GRANITE

### GLAZING LEGEND

- V TEMPERED VISION GLASS
- S TEMPERED SPANDREL GLASS

### GENERAL NOTES

1. G.C. TO SUPPLY PAINT SAMPLES FOR APPROVAL PRIOR TO PAINTING
2. KNOX BOX MOUNTED 4'-0" TO 6'-0" A.F.F. MODEL #3200 RECESSED WITH HINGED DOOR AND TAMPER SWITCH TIED INTO THE BUILDINGS FIRE ALARM AND/OR SECURITY ALARM SYSTEM.


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2023-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS

2. 2022-10-03 PLAN CHECK CORRECTION
3. 2022-12-22 PLAN CHECK CORRECTION

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR
HESPERIA, CA

**CUP# 22-00016**

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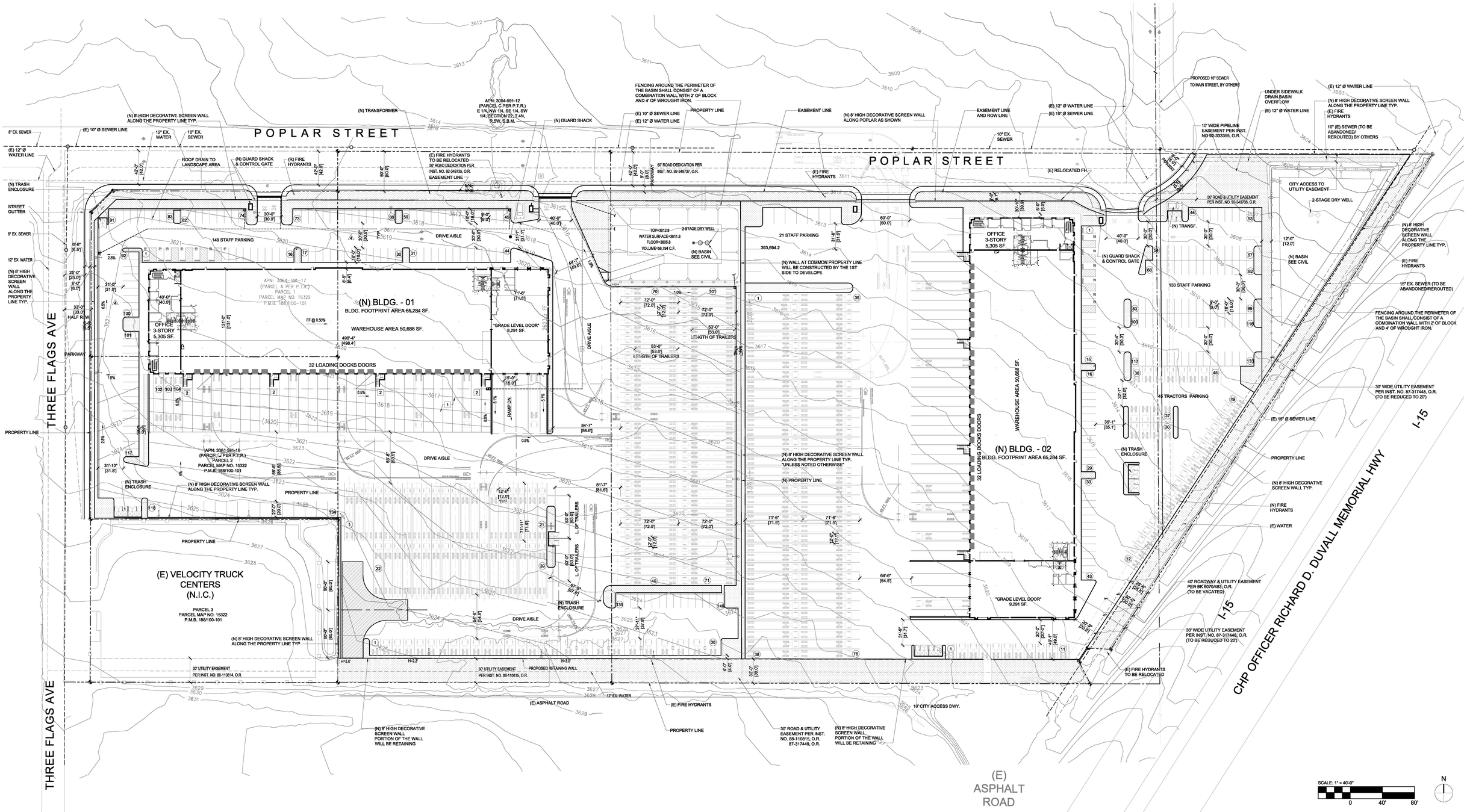
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**A2**
**BUILDING ELEVATIONS**


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## KEY NOTES

1. CONCRETE RAMP W/ 42" HIGH CONCRETE TILT-UP GUARD WALL OR BUILDING WALL ON BOTH SIDED OF RAMP
2. EXTERIOR CONCRETE STAIR

## TOPO KEY NOTES

1. ABUTTERS RIGHT OF INGRESS AND EGRESS TO OR FROM THE STREET OR HIGHWAY ABUTTING SAID LAND HAVE BEEN RELINQUISHED BY A DOCUMENT RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390 AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, BOTH OF OFFICIAL RECORDS.
2. AN EASEMENT FOR ROAD AND UTILITY PURPOSES RECORDED IN BOOK 6070, PAGE 483 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR ROAD AND HIGHWAY PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317448 OF OFFICIAL RECORDS.
4. AN EASEMENT FOR WATER LINE PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317449 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR WATER LINE, UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED APRIL 15, 1988 AS INST. NO. 88-110815 OF OFFICIAL RECORDS.
6. AN EASEMENT FOR PIPELINE PURPOSES RECORDED AUGUST 11, 1992 AS INST. NO. 92-333355 OF OFFICIAL RECORDS.
7. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349735 OF OFFICIAL RECORDS.
8. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349737 OF OFFICIAL RECORDS.
9. AN EASEMENT FOR ROAD, HIGHWAY AND PUBLIC UTILITY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349738 OF OFFICIAL RECORDS.

## BUILDINGS FLOOR AREA PROPOSED

| | WAREHOUSE | OFFICE | GRADE LEVEL DOOR | TOTAL AREA | BUILDING FOOTPRINT |
|---|---|---|---|---|---|
| BUILDING - 01 | 50,688 S.F. / S | 5,305 S.F. / B (1-STORY=5,305 S.F.) | 9,291 S.F. / S | 75,884 S.F. | 65,284 S.F. |
| BUILDING - 02 | 50,688 S.F. / S | 5,305 S.F. / B (1-STORY=5,305 S.F.) | 9,291 S.F. / S | 75,884 S.F. | 65,284 S.F. |

## PARKING SUMMARY (BUILDING_01)

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE AND GRADE LEVEL AREA (59,979 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. 0.4/1000 FOR AREA AFTER 10,000 | 10,000 S.F. (20 SPACE) | 40 | 149 |
| | | 49,979 S.F. (20 SPACE) | | |
| OFFICE (5,240 S.F.) 3- STORY = 15,720 S.F.) | 1 SPACE / 200 S.F. | 15,915 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | ***119*** | |

TOTAL OVERALL PARKING REQUIRED: ***119 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***149 SPACES***
INCLUDING H/C PARKING 7 SPACES

## PARKING SUMMARY (BUILDING_02)

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE AND GRADE LEVEL AREA (59,979 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. 0.4/1000 FOR AREA AFTER 10,000 | 10,000 S.F. (20 SPACE) | 40 | 154 |
| | | 49,979 S.F. (20 SPACE) | | |
| OFFICE (5,240 S.F.) 3- STORY = 15,720 S.F.) | 1 SPACE / 200 S.F. | 15,915 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | ***119*** | |

TOTAL OVERALL PARKING REQUIRED: ***119 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***133 SPACES***
INCLUDING H/C PARKING 6 SPACES

## SITE PLAN LEGEND

- (E) PROPERTY LINE
- (E) CENTER LINE
- (E) EASEMENT LINE
- (E) FENCE
- FIRE HYDRANT LOCATION TO BY FIRE DEPARTMENT
- (E) TREES

## BUILDING INFORMATION

PROJECT DESCRIPTION: NEW 1 - STORY WAREHOUSE WITH 3 - STORY OFFICE AREA

OCCUPANCY: S / B STORAGE / BUSINESS

CONSTRUCTIONS TYPE: V-A W/ AUTOMATIC FIRE SPRINKLER SYSTEM

| GROSS FLOOR AREA: | WAREHOUSE | OFFICE | SUB - TOTAL |
|---|---|---|---|
| BUILDING - 01 | 58,817 S.F. | 15,720 S.F. | 74,537 S.F. |
| BUILDING - 02 | 13,760 S.F. | | 13,961 S.F. |

TOTAL LOT GROSS AREA: 885,234 SQ. FT. / 20.32 ACRES

WAREHOUSE PROJECT GROSS LOT AREA: 458,255 SQ. FT./ 10.52 ACRES

TRUCK STOP PROJECT GROSS LOT AREA: 426,978 SQ. FT./ 9.8 ACRES

**REQUIRED FIRE RESISTIVE CONSTRUCTION:**

1. 1-HR FIRE BARRIER BETWEEN STORAGE AND B OCCUPANCY (DOOR W/60 MINUTE FIRE RATING)

## SCOPE OF WORK WAREHOUSE

**WAREHOUSE SCOPE:**

NEW SINGLE STORY WAREHOUSE BUILDING WITH 3-STORY OFFICE ON WEST SIDE. TOTAL FLOOR AREA IS 75,884 SF (ACTUAL BUILDING FOOTPRINT IS 65,284 SF. WAREHOUSE TO HAVE 28 ROLL UP DOORS. GRADE LEVEL PORTION TO HAVE 4 ROLL UP DOORS.

SITEWORK CONSISTS OF GRADING/DRAINAGE, COMBINATION OF AC AND CONCRETE PAVEMENT, ALL WET AND DRY UTILITIES, LANDSCAPE PLANTERS THROUGHOUT, TRASH ENCLOSURES PER CITY STANDARDS, PARKING LOT LIGHTING AND STRIPING FOR EMPLOYEE/GUEST AS WELL AS TRUCK PARKING.

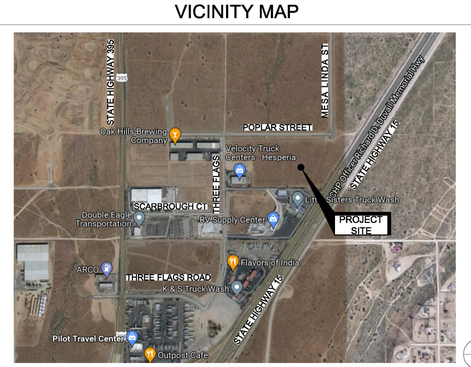
**PARKING PROVIDED: (WAREHOUSE 01)**
EMPLOYEE/GUEST 149 STALLS
TRACTOR/TRAILER 104 SPACES
TRACTOR ONLY 30 SPACES
**PARKING PROVIDED: (WAREHOUSE 02)**
EMPLOYEE/GUEST 154 STALLS
TRACTOR/TRAILER 76 SPACES
TRACTOR ONLY 45 SPACES

TO BE ENTITLED AS A SINGLE PLANNING PROJECT UNDER CUP# 22-00016 BUT CONSTRUCTED IN 2 PHASES.

PHASE 1 - WAREHOUSE 01, RELATED SITEWORK AND ALL STREET IMPROVEMENTS PLUS UTILITY STUBS TO BOTH BUILDINGS

PHASE 2 - WAREHOUSE 02, RELATED SITEWORK.

## VICINITY MAP




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2023-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS
1. 2022-08-15 PLAN CHECK CORRECTION
2. 2022-10-03 PLAN CHECK CORRECTION
3. 2022-12-22 PLAN CHECK CORRECTION
4. 2024-02-23 FIRE DEPT. CORRECTION

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR
HESPERIA, CA

**CUP# 22-00016**

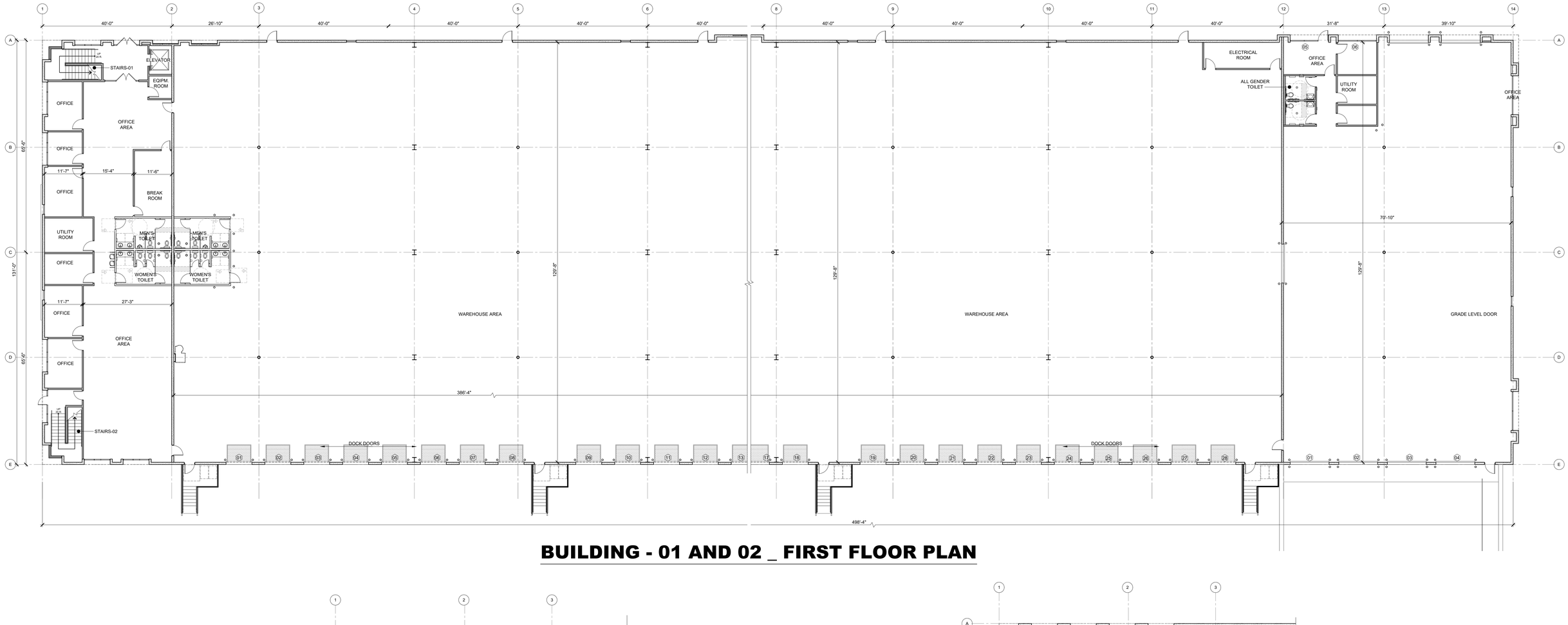
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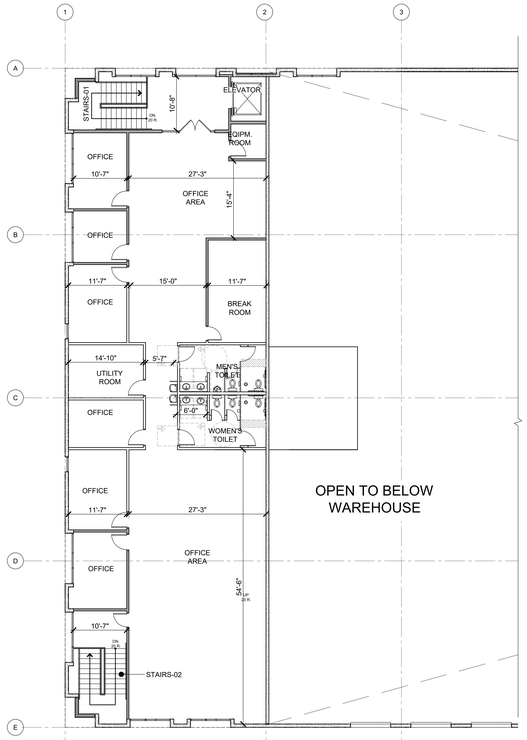
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002
**AS1**
SITE PLAN

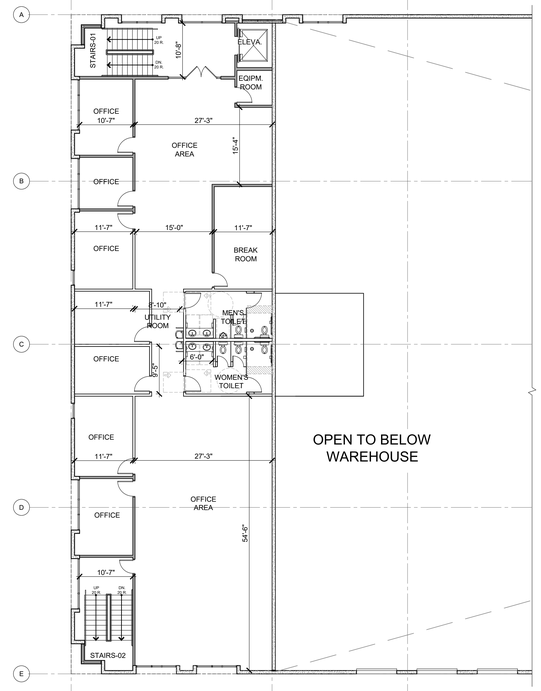
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# BUILDING - 01 AND 02 _ FIRST FLOOR PLAN




# BUILDING - 01 _ 2ND FLOOR PLAN
## BUILDING - 02 _ (SIMILAR)




# BUILDING - 01 _ 3RD FLOOR PLAN
## BUILDING - 02 _ (SIMILAR)

WALL LEGEND

- CONCRETE TILT-UP WALL SEE STRUCTURAL
- INTERIOR 20 GA STEEL STUDS WALL @ 16" O.C.
- 1-HR RATED WALL BETWEEN B AND S OCCUPANCIES

SCALE: 3/32" = 1'-0"

N


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2022-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR

HESPERIA, CA

**CUP# 22-00016**

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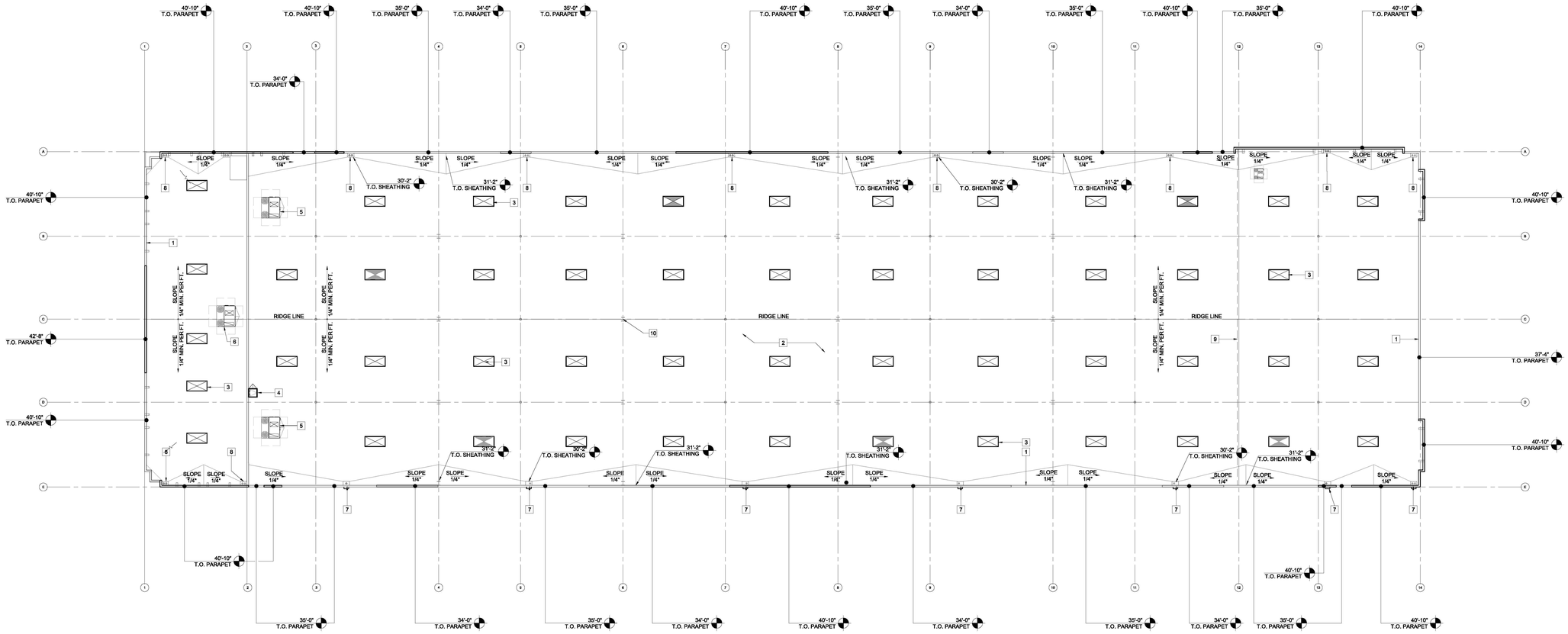

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**A1**

**FLOOR PLANS**


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ROOF PLAN
1/16" = 1'-0"

N

## KEY NOTES

1. CONCRETE PARAPET, SEE "S" DRAWINGS FOR THICKNESS.
2. PROVIDE 4-PLY BUILT-UP ROOFING OVER ROOF SHEATHING OVER ROOF FRAMING. ROOFING TO BE CLASS 1 RATED AND MINIMUM OF 10 YEAR EXTENDED WARRANTY COVERAGE PRODUCT BY GAF MATERIAL CORPORATION OR EQUAL. ORDER OF APPLICATION
   - FIBERGLASS BASE SHEET
   - GAFGLAS 2-PLY
   - GAFGLAS MINERAL SURFACE CAP SHEET

   * CLASS-A BUILT-UP ROOFING APPLICATION PER MANUFACTURES SPECIFICATIONS
3. 4'X8' SMOKE VENT/ SKYLIGHT
4. 30" x 36" ROOF HATCH LOCATION
5. PACKAGE RTU CURB FOR 277/480V AC UNITS (SERVING FOR 1ST AND 2ND FLOOR OFFICE SPACES)
6. PACKAGE RTU CURB FOR 277/480V AC UNITS (SERVING FOR 3RD FLOOR OFFICE SPACES)
7. INTERIOR ROOF DRAIN & OVERFLOW SCUPPERS STUB OUT 5' SEE CIVIL FOR CONNECTION
8. INTERIOR ROOF DRAIN AND OVERFLOW SUMP STUB OUT 5' SEE CIVIL FOR CONNECTION
9. LINE OF WALL BELOW
10. COLUMN BELOW, SEE STRUCTURAL DRAWINGS

NOTE:
ALL MECHANICAL EQUIPMENTS UNDER SEPARATE PERMIT AND PART OF TENANT IMPROVEMENT PROJECT PHASE IA

## SMOKE VENT/ SKYLIGHT

**SMOKE AND HEAT VENT/ SKYLIGHT SIZE: 4' X 8' = 32 S.F.**

BUILDING VOLUME (CU. FT.) / 9000 X SMOKE VENT SIZE = 1,859,840 CU. FT. / 9000 X 32

REQUIRED: 6 EA. SMOKE/ HEAT VENTS
PROVIDED: 6 EA. SMOKE/ HEAT VENTS

**SKYLIGHT SIZE: 4' X 8' = 32 S.F.**

(WAREHOUSE AREA) X 2.0% / (SMOKE VENT SIZE) = 1,185 S.F. / 32 S.F.
REQUIRED: 38 EA. SKYLIGHTS

PROVIDED 46 SMOKE/ HEAT VENTS/ SKYLIGHT COMBINATIONS

SMOKE VENT/ SKYLIGHT COMBINATION:
BRISTOLITE #4898: ES-CMG-1-ESA-1R-HW-MF
#R14504 OR EQ. TO COMPLY W./ IFC/CFC SECTION 910
AND LABELED TO COMPLY WITH UL 793

SKYLIGHT 4'X8' FIBERGLASS
BRISTOLITE #4898: ES-CMG-1-ESA-1R-HW-MF
ICC-ES REPORT NUMBER: ER-2469
COORDINATE EXACT LOCATION TO PREVENT CONFLICT WITH FRAMING, FIRE SPRINKLER LINES, ELECTRICAL CONDUITS AND LIGHTING. SEE STRUCTURAL DWG.

PROVIDE: SMOKE VENT/ SKYLIGHT COMBINATION

1. PROVIDE OUTSIDE MANUAL RELEASE FOR SMOKE VENTS PER FIRE DEPARTMENT REQUIREMENTS.
2. FUSIBLE LINK TEMPERATURE RATING TO BE MINIMALLY ABOVE SPRINKLER HEAD RATING WHEN BUILDING IS EQUIPPED WITH E.S.F.R. SPRINKLER SYSTEM.
3. SMOKE VENT MUST BE UL OR FM LISTED.

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2022-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS
1
2
3
4

# TRUCK WAREHOUSE
# SEC THREE FLAGS & POPLAR
HESPERIA, CA

**CUP# 22-00016**

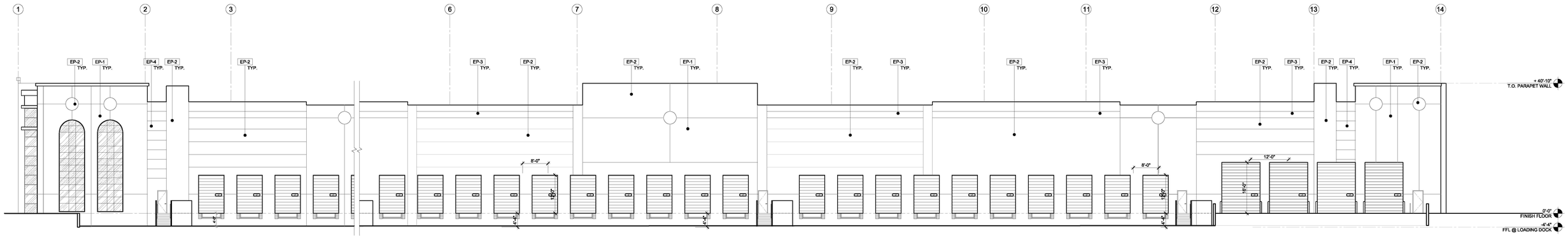
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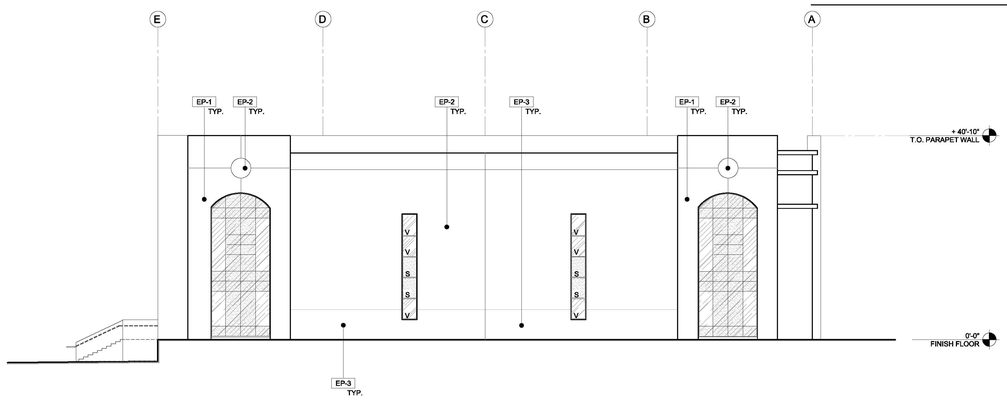
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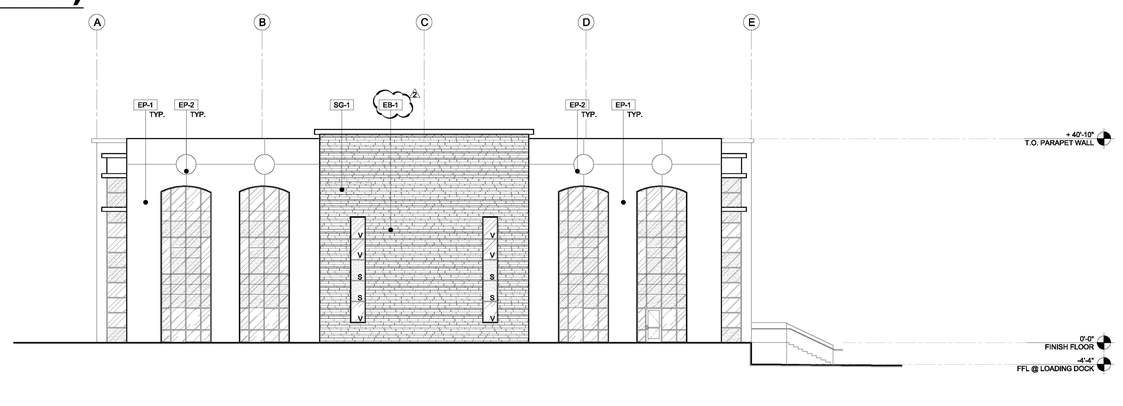
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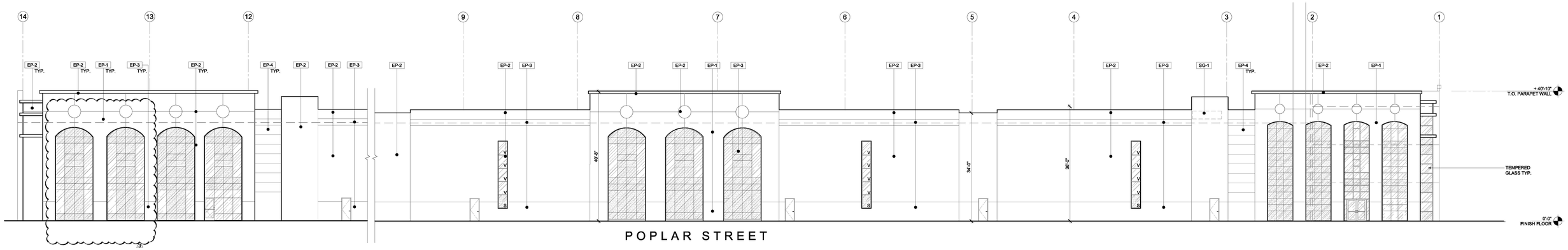

## BUILDING - 01 _ SOUTH ELEVATION (LOADING DOCK)
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ EAST ELEVATION
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ WEST ELEVATION (THREE FLAGS AVE.)
## BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ NORTH ELEVATION (OFFICE) POPLAR STREET
## BUILDING - 02 (SIMILAR)

### KEYNOTES

1. CONCRETE TILT-UP PANEL (PAINTED) SEE "S" DRAWINGS. FINISH GRADE VARIES SEE "C" DRAWINGS. WATERPROOF ALL WALLS WHERE GRADE IS HIGHER AND EXPOSED TO THE WEATHER ONE SIDE WATERPROOFING TO BE PROTECTED WITH PROTECTION BOARD AND A MIN. OF 6" GRAVEL. PROVIDE TRENCH DRAIN AT BOTTOM AND DAYLIGHT TO CURB OR TAKE TO STORM DRAIN. NOT REQUIRED AT DOCK HIGH CONDITION OR AT RAMP WALLS.
2. PANEL REVEAL. ALL REVEAL TO HAVE A MAX. OF 3/8" CHAMFER. REVEAL COLOR TO MATCH ADJACENT BUILDING FIELD COLOR.
3. OVERHEAD DOOR @ DRIVE THRU. W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
4. OVERHEAD DOOR @ DOCK HIGH W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
5. ALUMINUM STOREFRONT FRAMING WITH TEMPERED GLAZING
6. HALLOW METAL DOOR W/ COMPLETE WEATHER STRIPPING ALL AROUND DOOR TYP.
7. CONCRETE TILT-UP SCREEN WALL.
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11. DOCK BUMPER

### LEGEND - EXTERIOR FINISHES

- EP-1 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDUSTRIAL AGE DET618
- EP-2 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" WARM WHITE DEW380
- EP-3 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDIGO NIGHT DEA138
- EP-4 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" SAND DOLLAR DE6171
- SG - 1 SIGNAGE UNDER SEPARATE PERMIT
- EB-1 STONE VENEER - CORONADO PRAIRIE STONE - MOCHA GRANITE

### GLAZING LEGEND

- V TEMPERED VISION GLASS
- S TEMPERED SPANDREL GLASS

### GENERAL NOTES

1. G.C. TO SUPPLY PAINT SAMPLES FOR APPROVAL PRIOR TO PAINTING
2. KNOX BOX MOUNTED 4'-0" TO 6'-0" A.F.F. MODEL #3200 RECESSED WITH HINGED DOOR AND TAMPER SWITCH TIED INTO THE BUILDINGS FIRE ALARM AND/OR SECURITY ALARM SYSTEM.


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2023-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS

2. 2022-10-03 PLAN CHECK CORRECTION
3. 2022-12-22 PLAN CHECK CORRECTION

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# SEC THREE FLAGS & POPLAR
HESPERIA, CA

**CUP# 22-00016**

A2410

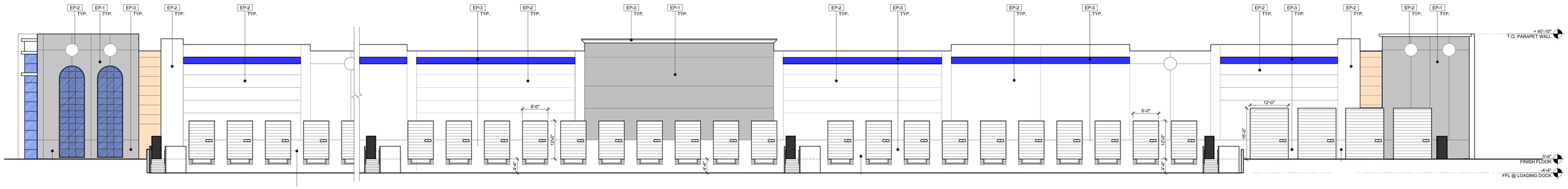
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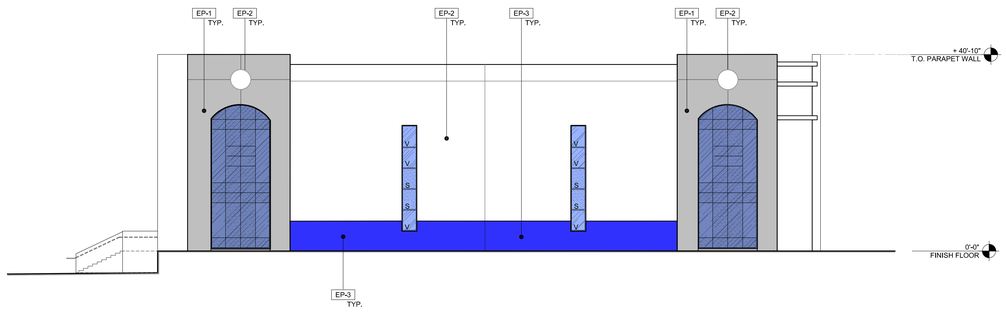
**A2**
**BUILDING ELEVATIONS**


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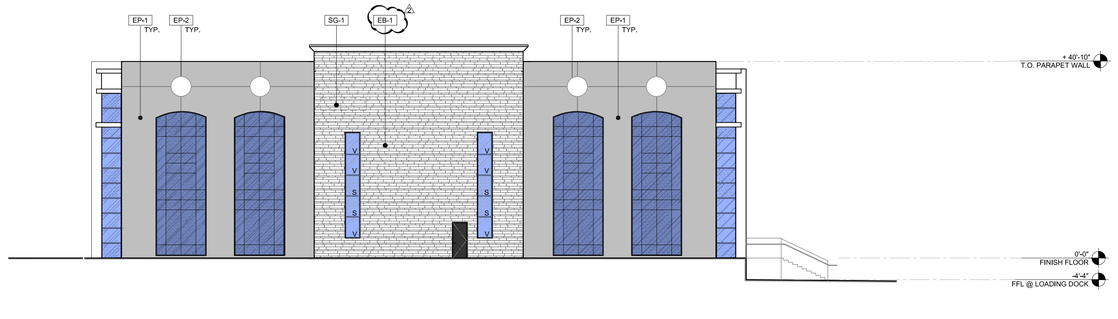

## BUILDING - 01 _ WEST ELEVATION (LOADING DOCK)

BUILDING - 02 (SIMILAR)



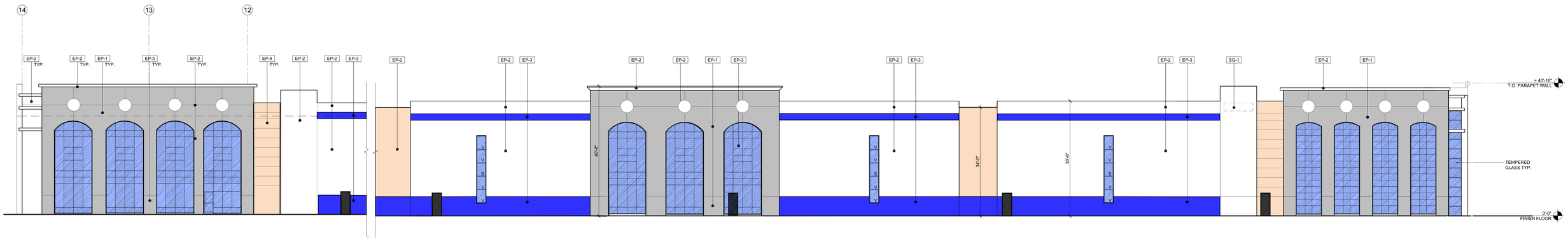

## BUILDING - 01 _ SOUTH ELEVATION

BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ NORTH ELEVATION

BUILDING - 02 (SIMILAR)




## BUILDING - 01 _ EAST ELEVATION (OFFICE)

BUILDING - 02 (SIMILAR)

### KEYNOTES

1. CONCRETE TILT-UP PANEL (PAINTED) SEE "S" DRAWINGS. FINISH GRADE VARIES SEE "C" DRAWINGS. WATERPROOF ALL WALLS WHERE GRADE IS HIGHER AND EXPOSED TO THE WEATHER ONE SIDE WATERPROOFING TO BE PROTECTED WITH PROTECTION BOARD AND A MIN. OF 6" GRAVEL. PROVIDE TRENCH DRAIN AT BOTTOM AND DAYLIGHT TO CURB OR TAKE TO STORM DRAIN. NOT REQUIRED AT DOCK HIGH CONDITION OR AT RAMP WALLS.
2. PANEL REVEAL. ALL REVEAL TO HAVE A MAX. OF 3/8" CHAMFER. REVEAL COLOR TO MATCH ADJACENT BUILDING FIELD COLOR.
3. OVERHEAD DOOR @ DRIVE THRU. W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
4. OVERHEAD DOOR @ DOCK HIGH W/ COMPLETE WEATHER- STRIPPING PROTECTION ALL AROUND TYP.
5. ALUMINUM STOREFRONT FRAMING WITH TEMPERED GLAZING
6. HALLOW METAL DOOR W/ COMPLETE WEATHER STRIPPING ALL AROUND DOOR TYP.
7. CONCRETE TILT-UP SCREEN WALL.
8. CONCRETE STAIR, LANDING AND METAL PIPE RAILING. PROVIDE NON-SKID NOSING TO MEET ADA REQUIREMENTS.
9. CONCRETE RAMP AND CONCRETE GUARD WALL
10. BUILDING ADDRESS PER FIRE DEPT. REQUIREMENTS. 18" HI. X 2" THK. HIGH DENSITY FOAM "HELVATIC BOLD" LETTER W/ ¼" PVC FACE EPOXY WALL
11. DOCK BUMPER

### LEGEND - EXTERIOR FINISHES

- EP-1 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDUSTRIAL AGE DET618
- EP-2 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" WARM WHITE DEW380
- EP-3 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" INDIGO NIGHT DEA138
- EP-4 CONCRETE TILT-UP PAINTED BY "DUNN EDWARDS" SAND DOLLAR DE6171
- SG-1 SIGNAGE UNDER SEPARATE PERMIT
- EB-1 STONE VENEER - CORONADO PRAIRIE STONE - MOCHA GRANITE

### GLAZING LEGEND

- V TEMPERED VISION GLASS
- S TEMPERED SPANDREL GLASS

### GENERAL NOTES

1. G.C. TO SUPPLY PAINT SAMPLES FOR APPROVAL PRIOR TO PAINTING
2. KNOX BOX MOUNTED 4'-0" TO 6'-0" A.F.F. MODEL #3200 RECESSED WITH HINGED DOOR AND TAMPER SWITCH TIED INTO THE BUILDINGS FIRE ALARM AND/OR SECURITY ALARM SYSTEM.

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# APPENDIX B

# CalEEMod INPUT AND RESULTS FOR AIR QUALITY AND GREENHOUSE GAS ANALYSIS

# 7187/ Cargo Solutions Warehouse Project v2 Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | 7187/ Cargo Solutions Warehouse Project v2 |
| Construction Start Date | 10/1/2025 |
| Operational Year | 2026 |
| Lead Agency | City of Hesperia |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.80 |
| Precipitation (days) | 1.40 |
| Location | 34.415000744541665, -117.39232197330344 |
| County | San Bernardino-Mojave Desert |
| City | Hesperia |
| Air District | Mojave Desert AQMD |
| Air Basin | Mojave Desert |
| TAZ | 5106 |
| EDFZ | 10 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southwest Gas Corp. |
| App Version | 2022.1.1.29 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 60.0 | 1000sqft | 1.38 | 59,979 | 26,864 | 0.00 | — | Warehouse 1 + Grade-Level Door |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| General Office Building | 15.9 | 1000sqft | 0.12 | 15,915 | 0.00 | 0.00 | — | 3 story building office 1 |
| General Office Building | 15.9 | 1000sqft | 0.12 | 15,915 | 0.00 | 0.00 | — | 3 story building office 2 |
| Unrefrigerated Warehouse-No Rail | 60.0 | 1000sqft | 1.38 | 59,979 | 58,389 | 0.00 | — | Warehouse 2 + Grade-Level Door |
| Parking Lot | 122 | 1000sqft | 2.80 | 0.00 | 0.00 | 0.00 | — | Parking Lot for Truck Warehouse Building 1 |
| Parking Lot | 144 | 1000sqft | 3.30 | 0.00 | 0.00 | 0.00 | — | Parking Lot for Truck Warehouse Building 2 |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Construction | C-11 | Limit Vehicle Speeds on Unpaved Roads |
| Construction | C-13 | Use Low-VOC Paints for Construction |
| Area Sources | AS-2 | Use Low-VOC Paints |

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.68 | 1.53 | 12.1 | 22.3 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,444 | 4,444 | 0.15 | 0.16 | 4.89 | 4,500 |
| Mit. | 1.68 | 1.53 | 12.1 | 22.3 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,444 | 4,444 | 0.15 | 0.16 | 4.89 | 4,500 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 41.1 | 41.1 | 31.8 | 29.0 | 0.08 | 1.28 | 2.10 | 3.38 | 1.17 | 0.26 | 1.43 | — | 8,796 | 8,796 | 0.35 | 0.16 | 0.13 | 8,835 |
| Mit. | 41.1 | 41.1 | 31.8 | 29.0 | 0.08 | 1.28 | 2.10 | 3.38 | 1.17 | 0.26 | 1.43 | — | 8,796 | 8,796 | 0.35 | 0.16 | 0.13 | 8,835 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.91 | 2.80 | 5.96 | 10.3 | 0.02 | 0.16 | 0.46 | 0.60 | 0.15 | 0.11 | 0.25 | — | 2,051 | 2,051 | 0.06 | 0.07 | 0.94 | 2,074 |
| Mit. | 2.91 | 2.80 | 5.96 | 10.3 | 0.02 | 0.16 | 0.46 | 0.60 | 0.15 | 0.11 | 0.25 | — | 2,051 | 2,051 | 0.06 | 0.07 | 0.94 | 2,074 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.53 | 0.51 | 1.09 | 1.87 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.02 | 0.05 | — | 340 | 340 | 0.01 | 0.01 | 0.16 | 343 |
| Mit. | 0.53 | 0.51 | 1.09 | 1.87 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.02 | 0.05 | — | 340 | 340 | 0.01 | 0.01 | 0.16 | 343 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 1.68 | 1.53 | 12.1 | 22.3 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,444 | 4,444 | 0.15 | 0.16 | 4.89 | 4,500 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 4.12 | 3.47 | 31.8 | 29.0 | 0.08 | 1.28 | 2.10 | 3.38 | 1.17 | 0.26 | 1.43 | — | 8,796 | 8,796 | 0.35 | 0.10 | 0.03 | 8,835 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | 41.1 | 41.1 | 12.1 | 20.8 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,345 | 4,345 | 0.13 | 0.16 | 0.13 | 4,396 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.52 | 0.44 | 4.00 | 3.85 | 0.01 | 0.16 | 0.26 | 0.42 | 0.15 | 0.03 | 0.18 | — | 1,101 | 1,101 | 0.04 | 0.01 | 0.07 | 1,106 |
| 2026 | 2.91 | 2.80 | 5.96 | 10.3 | 0.02 | 0.15 | 0.46 | 0.60 | 0.14 | 0.11 | 0.25 | — | 2,051 | 2,051 | 0.06 | 0.07 | 0.94 | 2,074 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.10 | 0.08 | 0.73 | 0.70 | < 0.005 | 0.03 | 0.05 | 0.08 | 0.03 | 0.01 | 0.03 | — | 182 | 182 | 0.01 | < 0.005 | 0.01 | 183 |
| 2026 | 0.53 | 0.51 | 1.09 | 1.87 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.02 | 0.05 | — | 340 | 340 | 0.01 | 0.01 | 0.16 | 343 |

## 2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2026 | 1.68 | 1.53 | 12.1 | 22.3 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,444 | 4,444 | 0.15 | 0.16 | 4.89 | 4,500 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 4.12 | 3.47 | 31.8 | 29.0 | 0.08 | 1.28 | 2.10 | 3.38 | 1.17 | 0.26 | 1.43 | — | 8,796 | 8,796 | 0.35 | 0.10 | 0.03 | 8,835 |
| 2026 | 41.1 | 41.1 | 12.1 | 20.8 | 0.03 | 0.32 | 1.00 | 1.28 | 0.29 | 0.24 | 0.50 | — | 4,345 | 4,345 | 0.13 | 0.16 | 0.13 | 4,396 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.52 | 0.44 | 4.00 | 3.85 | 0.01 | 0.16 | 0.26 | 0.42 | 0.15 | 0.03 | 0.18 | — | 1,101 | 1,101 | 0.04 | 0.01 | 0.07 | 1,106 |
| 2026 | 2.91 | 2.80 | 5.96 | 10.3 | 0.02 | 0.15 | 0.46 | 0.60 | 0.14 | 0.11 | 0.25 | — | 2,051 | 2,051 | 0.06 | 0.07 | 0.94 | 2,074 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.10 | 0.08 | 0.73 | 0.70 | < 0.005 | 0.03 | 0.05 | 0.08 | 0.03 | 0.01 | 0.03 | — | 182 | 182 | 0.01 | < 0.005 | 0.01 | 183 |
| 2026 | 0.53 | 0.51 | 1.09 | 1.87 | < 0.005 | 0.03 | 0.08 | 0.11 | 0.03 | 0.02 | 0.05 | — | 340 | 340 | 0.01 | 0.01 | 0.16 | 343 |

## 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 5.26 | 5.08 | 4.05 | 12.3 | 0.04 | 0.12 | 1.75 | 1.87 | 0.12 | 0.45 | 0.57 | 141 | 6,878 | 7,019 | 14.5 | 0.57 | 9.67 | 7,560 |
| Mit. | 5.26 | 5.08 | 4.05 | 12.3 | 0.04 | 0.12 | 1.75 | 1.87 | 0.12 | 0.45 | 0.57 | 141 | 6,878 | 7,019 | 14.5 | 0.57 | 9.67 | 7,560 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 4.03 | 3.95 | 4.18 | 4.72 | 0.04 | 0.11 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,735 | 6,876 | 14.5 | 0.57 | 0.33 | 7,408 |
| Mit. | 4.03 | 3.95 | 4.18 | 4.72 | 0.04 | 0.11 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,735 | 6,876 | 14.5 | 0.57 | 0.33 | 7,408 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 4.62 | 4.49 | 4.20 | 8.25 | 0.04 | 0.12 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,774 | 6,914 | 14.5 | 0.57 | 4.22 | 7,451 |
| Mit. | 4.62 | 4.49 | 4.20 | 8.25 | 0.04 | 0.12 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,774 | 6,914 | 14.5 | 0.57 | 4.22 | 7,451 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.84 | 0.82 | 0.77 | 1.51 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.08 | 0.10 | 23.3 | 1,121 | 1,145 | 2.40 | 0.09 | 0.70 | 1,234 |
| Mit. | 0.84 | 0.82 | 0.77 | 1.51 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.08 | 0.10 | 23.3 | 1,121 | 1,145 | 2.40 | 0.09 | 0.70 | 1,234 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.51 | 0.47 | 3.14 | 5.00 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,592 | 3,592 | 0.04 | 0.39 | 9.59 | 3,720 |
| Area | 4.66 | 4.57 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 5.26 | 5.08 | 4.05 | 12.3 | 0.04 | 0.12 | 1.75 | 1.87 | 0.12 | 0.45 | 0.57 | 141 | 6,878 | 7,019 | 14.5 | 0.57 | 9.67 | 7,560 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.46 | 0.42 | 3.34 | 4.01 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,476 | 3,476 | 0.04 | 0.39 | 0.25 | 3,595 |
| Area | 3.48 | 3.48 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 4.03 | 3.95 | 4.18 | 4.72 | 0.04 | 0.11 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,735 | 6,876 | 14.5 | 0.57 | 0.33 | 7,408 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.47 | 0.43 | 3.33 | 4.29 | 0.03 | 0.05 | 1.75 | 1.79 | 0.05 | 0.45 | 0.50 | — | 3,501 | 3,501 | 0.04 | 0.40 | 4.14 | 3,624 |
| Area | 4.06 | 4.02 | 0.03 | 3.26 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 13.4 | 13.4 | < 0.005 | < 0.005 | — | 13.4 |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 4.62 | 4.49 | 4.20 | 8.25 | 0.04 | 0.12 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,774 | 6,914 | 14.5 | 0.57 | 4.22 | 7,451 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.08 | 0.08 | 0.61 | 0.78 | 0.01 | 0.01 | 0.32 | 0.33 | 0.01 | 0.08 | 0.09 | — | 580 | 580 | 0.01 | 0.07 | 0.69 | 600 |
| Area | 0.74 | 0.73 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |
| Energy | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 491 | 491 | 0.03 | < 0.005 | — | 493 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 10.6 | 48.3 | 58.9 | 1.09 | 0.03 | — | 94.0 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 12.7 | 0.00 | 12.7 | 1.27 | 0.00 | — | 44.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | 0.84 | 0.82 | 0.77 | 1.51 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.08 | 0.10 | 23.3 | 1,121 | 1,145 | 2.40 | 0.09 | 0.70 | 1,234 |

## 2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.51 | 0.47 | 3.14 | 5.00 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,592 | 3,592 | 0.04 | 0.39 | 9.59 | 3,720 |
| Area | 4.66 | 4.57 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 5.26 | 5.08 | 4.05 | 12.3 | 0.04 | 0.12 | 1.75 | 1.87 | 0.12 | 0.45 | 0.57 | 141 | 6,878 | 7,019 | 14.5 | 0.57 | 9.67 | 7,560 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.46 | 0.42 | 3.34 | 4.01 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,476 | 3,476 | 0.04 | 0.39 | 0.25 | 3,595 |
| Area | 3.48 | 3.48 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 4.03 | 3.95 | 4.18 | 4.72 | 0.04 | 0.11 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,735 | 6,876 | 14.5 | 0.57 | 0.33 | 7,408 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.47 | 0.43 | 3.33 | 4.29 | 0.03 | 0.05 | 1.75 | 1.79 | 0.05 | 0.45 | 0.50 | — | 3,501 | 3,501 | 0.04 | 0.40 | 4.14 | 3,624 |
| Area | 4.06 | 4.02 | 0.03 | 3.26 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 13.4 | 13.4 | < 0.005 | < 0.005 | — | 13.4 |
| Energy | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 2,967 | 2,967 | 0.21 | 0.02 | — | 2,977 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | 4.62 | 4.49 | 4.20 | 8.25 | 0.04 | 0.12 | 1.75 | 1.86 | 0.11 | 0.45 | 0.56 | 141 | 6,774 | 6,914 | 14.5 | 0.57 | 4.22 | 7,451 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.08 | 0.08 | 0.61 | 0.78 | 0.01 | 0.01 | 0.32 | 0.33 | 0.01 | 0.08 | 0.09 | — | 580 | 580 | 0.01 | 0.07 | 0.69 | 600 |
| Area | 0.74 | 0.73 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |
| Energy | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 491 | 491 | 0.03 | < 0.005 | — | 493 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 10.6 | 48.3 | 58.9 | 1.09 | 0.03 | — | 94.0 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 12.7 | 0.00 | 12.7 | 1.27 | 0.00 | — | 44.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | 0.84 | 0.82 | 0.77 | 1.51 | 0.01 | 0.02 | 0.32 | 0.34 | 0.02 | 0.08 | 0.10 | 23.3 | 1,121 | 1,145 | 2.40 | 0.09 | 0.70 | 1,234 |

# 3. Construction Emissions Details

## 3.1. Grading Phase (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 4.05 | 3.40 | 31.5 | 28.1 | 0.08 | 1.27 | — | 1.27 | 1.17 | — | 1.17 | — | 8,436 | 8,436 | 0.34 | 0.07 | — | 8,464 |
| Dust From Material Movement | — | — | — | — | — | — | 1.86 | 1.86 | — | 0.20 | 0.20 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.48 | 0.40 | 3.71 | 3.32 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 994 | 994 | 0.04 | 0.01 | — | 997 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.68 | 0.61 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 165 | 165 | 0.01 | < 0.005 | — | 165 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.08 | 0.84 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 194 | 194 | 0.01 | 0.01 | 0.02 | 196 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | 0.20 | 0.04 | < 0.005 | < 0.005 | 0.04 | 0.05 | < 0.005 | 0.01 | 0.01 | — | 167 | 167 | < 0.005 | 0.03 | 0.01 | 175 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.01 | — | 23.5 | 23.5 | < 0.005 | < 0.005 | 0.04 | 23.8 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 19.6 | 19.6 | < 0.005 | < 0.005 | 0.02 | 20.6 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 3.89 | 3.89 | < 0.005 | < 0.005 | 0.01 | 3.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.25 | 3.25 | < 0.005 | < 0.005 | < 0.005 | 3.41 |

## 3.2. Grading Phase (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 4.05 | 3.40 | 31.5 | 28.1 | 0.08 | 1.27 | — | 1.27 | 1.17 | — | 1.17 | — | 8,436 | 8,436 | 0.34 | 0.07 | — | 8,464 |
| Dust From Material Movement | — | — | — | — | — | — | 1.86 | 1.86 | — | 0.20 | 0.20 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.48 | 0.40 | 3.71 | 3.32 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 994 | 994 | 0.04 | 0.01 | — | 997 |
| Dust From Material Movement | — | — | — | — | — | — | 0.22 | 0.22 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.09 | 0.07 | 0.68 | 0.61 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 165 | 165 | 0.01 | < 0.005 | — | 165 |
| Dust From Material Movement | — | — | — | — | — | — | 0.04 | 0.04 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.07 | 0.08 | 0.84 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 194 | 194 | 0.01 | 0.01 | 0.02 | 196 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | 0.20 | 0.04 | < 0.005 | < 0.005 | 0.04 | 0.05 | < 0.005 | 0.01 | 0.01 | — | 167 | 167 | < 0.005 | 0.03 | 0.01 | 175 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.01 | — | 23.5 | 23.5 | < 0.005 | < 0.005 | 0.04 | 23.8 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 19.6 | 19.6 | < 0.005 | < 0.005 | 0.02 | 20.6 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 3.89 | 3.89 | < 0.005 | < 0.005 | 0.01 | 3.94 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.25 | 3.25 | < 0.005 | < 0.005 | < 0.005 | 3.41 |

## 3.3. Vertical/Site Work Phase- Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 11.0 | 17.3 | 0.03 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 2,801 | 2,801 | 0.11 | 0.02 | — | 2,810 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 1.16 | 0.97 | 11.0 | 17.3 | 0.03 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 2,801 | 2,801 | 0.11 | 0.02 | — | 2,810 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.49 | 0.41 | 4.65 | 7.32 | 0.01 | 0.11 | — | 0.11 | 0.10 | — | 0.10 | — | 1,182 | 1,182 | 0.05 | 0.01 | — | 1,186 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.85 | 1.34 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 196 | 196 | 0.01 | < 0.005 | — | 196 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.32 | 0.29 | 0.27 | 4.67 | 0.00 | 0.00 | 0.79 | 0.79 | 0.00 | 0.19 | 0.19 | — | 866 | 866 | 0.04 | 0.03 | 2.93 | 879 |
| Vendor | 0.03 | 0.03 | 0.78 | 0.33 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 777 | 777 | < 0.005 | 0.11 | 1.96 | 811 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.29 | 0.26 | 0.29 | 3.11 | 0.00 | 0.00 | 0.79 | 0.79 | 0.00 | 0.19 | 0.19 | — | 767 | 767 | 0.01 | 0.03 | 0.08 | 776 |
| Vendor | 0.03 | 0.03 | 0.82 | 0.34 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 778 | 778 | < 0.005 | 0.11 | 0.05 | 810 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.12 | 0.11 | 0.13 | 1.48 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 333 | 333 | 0.01 | 0.01 | 0.53 | 338 |
| Vendor | 0.01 | 0.01 | 0.34 | 0.14 | < 0.005 | < 0.005 | 0.09 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 328 | 328 | < 0.005 | 0.04 | 0.36 | 342 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.27 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.1 | 55.1 | < 0.005 | < 0.005 | 0.09 | 55.9 |
| Vendor | < 0.005 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 54.3 | 54.3 | < 0.005 | 0.01 | 0.06 | 56.6 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.4. Vertical/Site Work Phase- Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 11.0 | 17.3 | 0.03 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 2,801 | 2,801 | 0.11 | 0.02 | — | 2,810 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 11.0 | 17.3 | 0.03 | 0.27 | — | 0.27 | 0.25 | — | 0.25 | — | 2,801 | 2,801 | 0.11 | 0.02 | — | 2,810 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.49 | 0.41 | 4.65 | 7.32 | 0.01 | 0.11 | — | 0.11 | 0.10 | — | 0.10 | — | 1,182 | 1,182 | 0.05 | 0.01 | — | 1,186 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.09 | 0.07 | 0.85 | 1.34 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 196 | 196 | 0.01 | < 0.005 | — | 196 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.32 | 0.29 | 0.27 | 4.67 | 0.00 | 0.00 | 0.79 | 0.79 | 0.00 | 0.19 | 0.19 | — | 866 | 866 | 0.04 | 0.03 | 2.93 | 879 |
| Vendor | 0.03 | 0.03 | 0.78 | 0.33 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 777 | 777 | < 0.005 | 0.11 | 1.96 | 811 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.29 | 0.26 | 0.29 | 3.11 | 0.00 | 0.00 | 0.79 | 0.79 | 0.00 | 0.19 | 0.19 | — | 767 | 767 | 0.01 | 0.03 | 0.08 | 776 |
| Vendor | 0.03 | 0.03 | 0.82 | 0.34 | 0.01 | 0.01 | 0.21 | 0.22 | 0.01 | 0.06 | 0.07 | — | 778 | 778 | < 0.005 | 0.11 | 0.05 | 810 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.13 | 1.48 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 333 | 333 | 0.01 | 0.01 | 0.53 | 338 |
| Vendor | 0.01 | 0.01 | 0.34 | 0.14 | < 0.005 | < 0.005 | 0.09 | 0.09 | < 0.005 | 0.02 | 0.03 | — | 328 | 328 | < 0.005 | 0.04 | 0.36 | 342 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.27 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.1 | 55.1 | < 0.005 | < 0.005 | 0.09 | 55.9 |
| Vendor | < 0.005 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 54.3 | 54.3 | < 0.005 | 0.01 | 0.06 | 56.6 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Vertical/Site Work Phase- Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.91 | 0.76 | 7.12 | 9.94 | 0.01 | 0.32 | — | 0.32 | 0.29 | — | 0.29 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,516 |
| Paving | 0.69 | 0.69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.91 | 0.76 | 7.12 | 9.94 | 0.01 | 0.32 | — | 0.32 | 0.29 | — | 0.29 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,516 |
| Paving | 0.69 | 0.69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.45 | 0.63 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 95.2 | 95.2 | < 0.005 | < 0.005 | — | 95.5 |
| Paving | 0.04 | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.08 | 0.11 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 15.8 | 15.8 | < 0.005 | < 0.005 | — | 15.8 |
| Paving | 0.01 | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.16 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 214 | 214 | 0.01 | 0.01 | 0.73 | 218 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.77 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 190 | 190 | < 0.005 | 0.01 | 0.02 | 192 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.6. Vertical/Site Work Phase- Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.91 | 0.76 | 7.12 | 9.94 | 0.01 | 0.32 | — | 0.32 | 0.29 | — | 0.29 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,516 |
| Paving | 0.69 | 0.69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.91 | 0.76 | 7.12 | 9.94 | 0.01 | 0.32 | — | 0.32 | 0.29 | — | 0.29 | — | 1,511 | 1,511 | 0.06 | 0.01 | — | 1,516 |
| Paving | 0.69 | 0.69 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.45 | 0.63 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 95.2 | 95.2 | < 0.005 | < 0.005 | — | 95.5 |
| Paving | 0.04 | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 0.01 | 0.01 | 0.08 | 0.11 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 15.8 | 15.8 | < 0.005 | < 0.005 | — | 15.8 |
| Paving | 0.01 | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.08 | 0.07 | 0.07 | 1.16 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 214 | 214 | 0.01 | 0.01 | 0.73 | 218 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.07 | 0.06 | 0.07 | 0.77 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.05 | 0.05 | — | 190 | 190 | < 0.005 | 0.01 | 0.02 | 192 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | 0.02 | 12.5 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | < 0.005 | < 0.005 | < 0.005 | 2.07 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Vertical/Site Work Phase- Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.12 | 0.86 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 40.9 | 40.9 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.04 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.95 | 6.95 | < 0.005 | < 0.005 | — | 6.97 |
| Architectural Coatings | 2.13 | 2.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.15 | 1.15 | < 0.005 | < 0.005 | — | 1.15 |
| Architectural Coatings | 0.39 | 0.39 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.06 | 0.62 | 0.00 | 0.00 | 0.16 | 0.16 | 0.00 | 0.04 | 0.04 | — | 153 | 153 | < 0.005 | 0.01 | 0.02 | 155 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.22 | 8.22 | < 0.005 | < 0.005 | 0.01 | 8.33 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.36 | 1.36 | < 0.005 | < 0.005 | < 0.005 | 1.38 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.8. Vertical/Site Work Phase- Architectural Coating (2026) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 0.15 | 0.12 | 0.86 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 40.9 | 40.9 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.04 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.95 | 6.95 | < 0.005 | < 0.005 | — | 6.97 |
| Architectural Coatings | 2.13 | 2.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.15 | 1.15 | < 0.005 | < 0.005 | — | 1.15 |
| Architectural Coatings | 0.39 | 0.39 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.06 | 0.62 | 0.00 | 0.00 | 0.16 | 0.16 | 0.00 | 0.04 | 0.04 | — | 153 | 153 | < 0.005 | 0.01 | 0.02 | 155 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.22 | 8.22 | < 0.005 | < 0.005 | 0.01 | 8.33 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.36 | 1.36 | < 0.005 | < 0.005 | < 0.005 | 1.38 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. Off-Site Phase (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.49 | 0.41 | 3.87 | 5.85 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 864 | 864 | 0.04 | 0.01 | — | 867 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.25 | 0.38 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 55.8 | 55.8 | < 0.005 | < 0.005 | — | 56.0 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | < 0.005 | 0.05 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 9.24 | 9.24 | < 0.005 | < 0.005 | — | 9.27 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.56 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 129 | 129 | 0.01 | < 0.005 | 0.01 | 131 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.58 | 8.58 | < 0.005 | < 0.005 | 0.01 | 8.71 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.42 | 1.42 | < 0.005 | < 0.005 | < 0.005 | 1.44 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.10. Off-Site Phase (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.49 | 0.41 | 3.87 | 5.85 | 0.01 | 0.14 | — | 0.14 | 0.13 | — | 0.13 | — | 864 | 864 | 0.04 | 0.01 | — | 867 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.25 | 0.38 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 55.8 | 55.8 | < 0.005 | < 0.005 | — | 56.0 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | < 0.005 | 0.05 | 0.07 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 9.24 | 9.24 | < 0.005 | < 0.005 | — | 9.27 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.56 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 129 | 129 | 0.01 | < 0.005 | 0.01 | 131 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.58 | 8.58 | < 0.005 | < 0.005 | 0.01 | 8.71 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.42 | 1.42 | < 0.005 | < 0.005 | < 0.005 | 1.44 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Off-Site Phase (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.47 | 0.39 | 3.71 | 5.85 | 0.01 | 0.12 | — | 0.12 | 0.11 | — | 0.11 | — | 864 | 864 | 0.04 | 0.01 | — | 867 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.32 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 74.4 | 74.4 | < 0.005 | < 0.005 | — | 74.7 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | — | 12.4 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.51 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 127 | 127 | < 0.005 | < 0.005 | 0.01 | 128 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.2 | 11.2 | < 0.005 | < 0.005 | 0.02 | 11.4 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.86 | 1.86 | < 0.005 | < 0.005 | < 0.005 | 1.88 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.12. Off-Site Phase (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.47 | 0.39 | 3.71 | 5.85 | 0.01 | 0.12 | — | 0.12 | 0.11 | — | 0.11 | — | 864 | 864 | 0.04 | 0.01 | — | 867 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.32 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 74.4 | 74.4 | < 0.005 | < 0.005 | — | 74.7 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.06 | 0.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 12.3 | 12.3 | < 0.005 | < 0.005 | — | 12.4 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.05 | 0.51 | 0.00 | 0.00 | 0.13 | 0.13 | 0.00 | 0.03 | 0.03 | — | 127 | 127 | < 0.005 | < 0.005 | 0.01 | 128 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 11.2 | 11.2 | < 0.005 | < 0.005 | 0.02 | 11.4 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.86 | 1.86 | < 0.005 | < 0.005 | < 0.005 | 1.88 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.1. Mobile Emissions by Land Use

### 4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.40 | 0.37 | 2.48 | 3.95 | 0.03 | 0.04 | 1.38 | 1.42 | 0.04 | 0.36 | 0.39 | — | 2,839 | 2,839 | 0.03 | 0.31 | 7.58 | 2,940 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 0.11 | 0.10 | 0.66 | 1.05 | 0.01 | 0.01 | 0.37 | 0.38 | 0.01 | 0.09 | 0.10 | — | 753 | 753 | 0.01 | 0.08 | 2.01 | 780 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.51 | 0.47 | 3.14 | 5.00 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,592 | 3,592 | 0.04 | 0.39 | 9.59 | 3,720 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.36 | 0.33 | 2.64 | 3.17 | 0.03 | 0.04 | 1.38 | 1.42 | 0.04 | 0.36 | 0.39 | — | 2,747 | 2,747 | 0.03 | 0.31 | 0.20 | 2,841 |
| General Office Building | 0.10 | 0.09 | 0.70 | 0.84 | 0.01 | 0.01 | 0.37 | 0.38 | 0.01 | 0.09 | 0.10 | — | 729 | 729 | 0.01 | 0.08 | 0.05 | 754 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.46 | 0.42 | 3.34 | 4.01 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,476 | 3,476 | 0.04 | 0.39 | 0.25 | 3,595 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.07 | 0.06 | 0.48 | 0.62 | < 0.005 | 0.01 | 0.25 | 0.26 | 0.01 | 0.06 | 0.07 | — | 458 | 458 | 0.01 | 0.05 | 0.54 | 474 |
| General Office Building | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | < 0.005 | 0.07 | 0.07 | < 0.005 | 0.02 | 0.02 | — | 122 | 122 | < 0.005 | 0.01 | 0.14 | 126 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.08 | 0.08 | 0.61 | 0.78 | 0.01 | 0.01 | 0.32 | 0.33 | 0.01 | 0.08 | 0.09 | — | 580 | 580 | 0.01 | 0.07 | 0.69 | 600 |

### 4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.40 | 0.37 | 2.48 | 3.95 | 0.03 | 0.04 | 1.38 | 1.42 | 0.04 | 0.36 | 0.39 | — | 2,839 | 2,839 | 0.03 | 0.31 | 7.58 | 2,940 |
| General Office Building | 0.11 | 0.10 | 0.66 | 1.05 | 0.01 | 0.01 | 0.37 | 0.38 | 0.01 | 0.09 | 0.10 | — | 753 | 753 | 0.01 | 0.08 | 2.01 | 780 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.51 | 0.47 | 3.14 | 5.00 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,592 | 3,592 | 0.04 | 0.39 | 9.59 | 3,720 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.36 | 0.33 | 2.64 | 3.17 | 0.03 | 0.04 | 1.38 | 1.42 | 0.04 | 0.36 | 0.39 | — | 2,747 | 2,747 | 0.03 | 0.31 | 0.20 | 2,841 |
| General Office Building | 0.10 | 0.09 | 0.70 | 0.84 | 0.01 | 0.01 | 0.37 | 0.38 | 0.01 | 0.09 | 0.10 | — | 729 | 729 | 0.01 | 0.08 | 0.05 | 754 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.46 | 0.42 | 3.34 | 4.01 | 0.03 | 0.05 | 1.75 | 1.80 | 0.05 | 0.45 | 0.50 | — | 3,476 | 3,476 | 0.04 | 0.39 | 0.25 | 3,595 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.07 | 0.06 | 0.48 | 0.62 | < 0.005 | 0.01 | 0.25 | 0.26 | 0.01 | 0.06 | 0.07 | — | 458 | 458 | 0.01 | 0.05 | 0.54 | 474 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | 0.02 | 0.02 | 0.13 | 0.16 | < 0.005 | < 0.005 | 0.07 | 0.07 | < 0.005 | 0.02 | 0.02 | — | 122 | 122 | < 0.005 | 0.01 | 0.14 | 126 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.08 | 0.08 | 0.61 | 0.78 | 0.01 | 0.01 | 0.32 | 0.33 | 0.01 | 0.08 | 0.09 | — | 580 | 580 | 0.01 | 0.07 | 0.69 | 600 |

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 808 | 808 | 0.05 | 0.01 | — | 811 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 810 | 810 | 0.05 | 0.01 | — | 813 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 339 | 339 | 0.02 | < 0.005 | — | 340 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 1,956 | 1,956 | 0.12 | 0.01 | — | 1,964 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 808 | 808 | 0.05 | 0.01 | — | 811 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 810 | 810 | 0.05 | 0.01 | — | 813 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 339 | 339 | 0.02 | < 0.005 | — | 340 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 1,956 | 1,956 | 0.12 | 0.01 | — | 1,964 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 134 | 134 | 0.01 | < 0.005 | — | 135 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 56.2 | 56.2 | < 0.005 | < 0.005 | — | 56.4 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 324 | 324 | 0.02 | < 0.005 | — | 325 |

### 4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 808 | 808 | 0.05 | 0.01 | — | 811 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 810 | 810 | 0.05 | 0.01 | — | 813 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 339 | 339 | 0.02 | < 0.005 | — | 340 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 1,956 | 1,956 | 0.12 | 0.01 | — | 1,964 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 808 | 808 | 0.05 | 0.01 | — | 811 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 810 | 810 | 0.05 | 0.01 | — | 813 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 339 | 339 | 0.02 | < 0.005 | — | 340 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 1,956 | 1,956 | 0.12 | 0.01 | — | 1,964 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | 134 | 134 | 0.01 | < 0.005 | — | 135 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 56.2 | 56.2 | < 0.005 | < 0.005 | — | 56.4 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 324 | 324 | 0.02 | < 0.005 | — | 325 |

### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unrefrig Warehouse-No Rail | 0.07 | 0.03 | 0.61 | 0.51 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 731 | 731 | 0.06 | < 0.005 | — | 733 |
| General Office Building | 0.03 | 0.01 | 0.23 | 0.20 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 280 | 280 | 0.02 | < 0.005 | — | 281 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 1,011 | 1,011 | 0.09 | < 0.005 | — | 1,014 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.07 | 0.03 | 0.61 | 0.51 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 731 | 731 | 0.06 | < 0.005 | — | 733 |
| General Office Building | 0.03 | 0.01 | 0.23 | 0.20 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 280 | 280 | 0.02 | < 0.005 | — | 281 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 1,011 | 1,011 | 0.09 | < 0.005 | — | 1,014 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.01 | 0.01 | 0.11 | 0.09 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 121 | 121 | 0.01 | < 0.005 | — | 121 |
| General Office Building | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 46.3 | 46.3 | < 0.005 | < 0.005 | — | 46.5 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 167 | 167 | 0.01 | < 0.005 | — | 168 |

## 4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.07 | 0.03 | 0.61 | 0.51 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 731 | 731 | 0.06 | < 0.005 | — | 733 |
| General Office Building | 0.03 | 0.01 | 0.23 | 0.20 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 280 | 280 | 0.02 | < 0.005 | — | 281 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 1,011 | 1,011 | 0.09 | < 0.005 | — | 1,014 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | 0.07 | 0.03 | 0.61 | 0.51 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 731 | 731 | 0.06 | < 0.005 | — | 733 |
| General Office Building | 0.03 | 0.01 | 0.23 | 0.20 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 280 | 280 | 0.02 | < 0.005 | — | 281 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.09 | 0.05 | 0.85 | 0.71 | 0.01 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 1,011 | 1,011 | 0.09 | < 0.005 | — | 1,014 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No | 0.01 | 0.01 | 0.11 | 0.09 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 121 | 121 | 0.01 | < 0.005 | — | 121 |
| General Office Building | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 46.3 | 46.3 | < 0.005 | < 0.005 | — | 46.5 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 167 | 167 | 0.01 | < 0.005 | — | 168 |

## 4.3. Area Emissions by Source

### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 3.27 | 3.27 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.21 | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 1.17 | 1.08 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Total | 4.66 | 4.57 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consum Products | 3.27 | 3.27 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.21 | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 3.48 | 3.48 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 0.60 | 0.60 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.04 | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.11 | 0.10 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |
| Total | 0.74 | 0.73 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |

### 4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 3.27 | 3.27 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.21 | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landsca Equipment | 1.17 | 1.08 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Total | 4.66 | 4.57 | 0.06 | 6.60 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 27.1 | 27.1 | < 0.005 | < 0.005 | — | 27.2 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 3.27 | 3.27 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.21 | 0.21 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 3.48 | 3.48 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 0.60 | 0.60 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.04 | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.11 | 0.10 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |
| Total | 0.74 | 0.73 | 0.01 | 0.59 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.22 | 2.22 | < 0.005 | < 0.005 | — | 2.22 |

## 4.4. Water Emissions by Land Use

### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 53.2 | 244 | 298 | 5.47 | 0.13 | — | 473 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 10.8 | 47.5 | 58.3 | 1.11 | 0.03 | — | 94.2 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 53.2 | 244 | 298 | 5.47 | 0.13 | — | 473 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 10.8 | 47.5 | 58.3 | 1.11 | 0.03 | — | 94.2 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 8.80 | 40.5 | 49.3 | 0.90 | 0.02 | — | 78.4 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 1.79 | 7.86 | 9.66 | 0.18 | < 0.005 | — | 15.6 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 10.6 | 48.3 | 58.9 | 1.09 | 0.03 | — | 94.0 |

### 4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 53.2 | 244 | 298 | 5.47 | 0.13 | — | 473 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 10.8 | 47.5 | 58.3 | 1.11 | 0.03 | — | 94.2 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 53.2 | 244 | 298 | 5.47 | 0.13 | — | 473 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 10.8 | 47.5 | 58.3 | 1.11 | 0.03 | — | 94.2 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 64.0 | 292 | 356 | 6.58 | 0.16 | — | 568 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 8.80 | 40.5 | 49.3 | 0.90 | 0.02 | — | 78.4 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 1.79 | 7.86 | 9.66 | 0.18 | < 0.005 | — | 15.6 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 10.6 | 48.3 | 58.9 | 1.09 | 0.03 | — | 94.0 |

## 4.5. Waste Emissions by Land Use

### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 60.8 | 0.00 | 60.8 | 6.07 | 0.00 | — | 213 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 16.0 | 0.00 | 16.0 | 1.59 | 0.00 | — | 55.8 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 60.8 | 0.00 | 60.8 | 6.07 | 0.00 | — | 213 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 16.0 | 0.00 | 16.0 | 1.59 | 0.00 | — | 55.8 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 10.1 | 0.00 | 10.1 | 1.01 | 0.00 | — | 35.2 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 2.64 | 0.00 | 2.64 | 0.26 | 0.00 | — | 9.24 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 12.7 | 0.00 | 12.7 | 1.27 | 0.00 | — | 44.4 |

### 4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unrefrig Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 60.8 | 0.00 | 60.8 | 6.07 | 0.00 | — | 213 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 16.0 | 0.00 | 16.0 | 1.59 | 0.00 | — | 55.8 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 60.8 | 0.00 | 60.8 | 6.07 | 0.00 | — | 213 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 16.0 | 0.00 | 16.0 | 1.59 | 0.00 | — | 55.8 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 76.7 | 0.00 | 76.7 | 7.67 | 0.00 | — | 268 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unrefrigerated Warehouse-No Rail | — | — | — | — | — | — | — | — | — | — | — | 10.1 | 0.00 | 10.1 | 1.01 | 0.00 | — | 35.2 |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | 2.64 | 0.00 | 2.64 | 0.26 | 0.00 | — | 9.24 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 12.7 | 0.00 | 12.7 | 1.27 | 0.00 | — | 44.4 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |

### 4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.08 | 0.08 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| General Office Building | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 |

## 4.7. Offroad Emissions By Equipment Type

### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.8. Stationary Emissions By Equipment Type

### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.9. User Defined Emissions By Equipment Type

### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Grading Phase | Grading | 10/1/2025 | 11/28/2025 | 5.00 | 43.0 | — |
| Vertical/Site Work Phase- Building Construction | Building Construction | 2/14/2026 | 9/17/2026 | 5.00 | 154 | — |
| Vertical/Site Work Phase- Paving | Paving | 9/18/2026 | 10/20/2026 | 5.00 | 23.0 | — |
| Vertical/Site Work Phase- Architectural Coating | Architectural Coating | 10/21/2026 | 11/16/2026 | 5.00 | 19.0 | — |
| Off-Site Phase | Trenching | 11/29/2025 | 2/13/2026 | 5.00 | 55.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Grading Phase | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Grading Phase | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Grading Phase | Scrapers | Diesel | Average | 4.00 | 8.00 | 423 | 0.48 |
| Vertical/Site Work Phase- Building Construction | Rough Terrain Forklifts | Diesel | Average | 4.00 | 8.00 | 96.0 | 0.40 |
| Vertical/Site Work Phase- Building Construction | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 7.00 | 84.0 | 0.37 |
| Vertical/Site Work Phase- Building Construction | Skid Steer Loaders | Diesel | Average | 4.00 | 8.00 | 46.0 | 0.45 |
| Vertical/Site Work Phase- Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vertical/Site Work Phase- Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Vertical/Site Work Phase- Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Vertical/Site Work Phase- Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Off-Site Phase | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Off-Site Phase | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Grading Phase | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Grading Phase | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| Grading Phase | Scrapers | Diesel | Average | 4.00 | 8.00 | 423 | 0.48 |
| Vertical/Site Work Phase- Building Construction | Rough Terrain Forklifts | Diesel | Average | 4.00 | 8.00 | 96.0 | 0.40 |
| Vertical/Site Work Phase- Building Construction | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 7.00 | 84.0 | 0.37 |
| Vertical/Site Work Phase- Building Construction | Skid Steer Loaders | Diesel | Average | 4.00 | 8.00 | 46.0 | 0.45 |
| Vertical/Site Work Phase- Paving | Pavers | Diesel | Average | 2.00 | 8.00 | 81.0 | 0.42 |
| Vertical/Site Work Phase- Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Vertical/Site Work Phase- Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vertical/Site Work Phase- Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Off-Site Phase | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Off-Site Phase | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Grading Phase | — | — | — | — |
| Grading Phase | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Grading Phase | Vendor | — | 10.2 | HHDT,MHDT |
| Grading Phase | Hauling | 2.44 | 20.0 | HHDT |
| Grading Phase | Onsite truck | — | — | HHDT |
| Vertical/Site Work Phase- Building Construction | — | — | — | — |
| Vertical/Site Work Phase- Building Construction | Worker | 60.6 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Building Construction | Vendor | 24.9 | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Vertical/Site Work Phase- Building Construction | Onsite truck | — | — | HHDT |
| Vertical/Site Work Phase- Paving | — | — | — | — |
| Vertical/Site Work Phase- Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Paving | Vendor | — | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Paving | Hauling | 0.00 | 20.0 | HHDT |
| Vertical/Site Work Phase- Paving | Onsite truck | — | — | HHDT |

| | | | | |
|---|---|---|---|---|
| Vertical/Site Work Phase- Architectural Coating | — | — | — | — |
| Vertical/Site Work Phase- Architectural Coating | Worker | 12.1 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Architectural Coating | Vendor | — | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Vertical/Site Work Phase- Architectural Coating | Onsite truck | — | — | HHDT |
| Off-Site Phase | — | — | — | — |
| Off-Site Phase | Worker | 10.0 | 18.5 | LDA,LDT1,LDT2 |
| Off-Site Phase | Vendor | — | 10.2 | HHDT,MHDT |
| Off-Site Phase | Hauling | 0.00 | 20.0 | HHDT |
| Off-Site Phase | Onsite truck | — | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Grading Phase | — | — | — | — |
| Grading Phase | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Grading Phase | Vendor | — | 10.2 | HHDT,MHDT |
| Grading Phase | Hauling | 2.44 | 20.0 | HHDT |
| Grading Phase | Onsite truck | — | — | HHDT |
| Vertical/Site Work Phase- Building Construction | — | — | — | — |
| Vertical/Site Work Phase- Building Construction | Worker | 60.6 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Building Construction | Vendor | 24.9 | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Building Construction | Hauling | 0.00 | 20.0 | HHDT |

| | | | | |
|---|---|---|---|---|
| Vertical/Site Work Phase- Building Construction | Onsite truck | — | — | HHDT |
| Vertical/Site Work Phase- Paving | — | — | — | — |
| Vertical/Site Work Phase- Paving | Worker | 15.0 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Paving | Vendor | — | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Paving | Hauling | 0.00 | 20.0 | HHDT |
| Vertical/Site Work Phase- Paving | Onsite truck | — | — | HHDT |
| Vertical/Site Work Phase- Architectural Coating | — | — | — | — |
| Vertical/Site Work Phase- Architectural Coating | Worker | 12.1 | 18.5 | LDA,LDT1,LDT2 |
| Vertical/Site Work Phase- Architectural Coating | Vendor | — | 10.2 | HHDT,MHDT |
| Vertical/Site Work Phase- Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Vertical/Site Work Phase- Architectural Coating | Onsite truck | — | — | HHDT |
| Off-Site Phase | — | — | — | — |
| Off-Site Phase | Worker | 10.0 | 18.5 | LDA,LDT1,LDT2 |
| Off-Site Phase | Vendor | — | 10.2 | HHDT,MHDT |
| Off-Site Phase | Hauling | 0.00 | 20.0 | HHDT |
| Off-Site Phase | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Vertical/Site Work Phase-Architectural Coating | 0.00 | 0.00 | 227,682 | 75,894 | 15,941 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Grading Phase | — | 840 | 194 | 0.00 | — |
| Vertical/Site Work Phase-Paving | 0.00 | 0.00 | 0.00 | 0.00 | 6.10 |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 0.00 | 0% |
| General Office Building | 0.00 | 0% |
| General Office Building | 0.00 | 0% |
| Unrefrigerated Warehouse-No Rail | 0.00 | 0% |
| Parking Lot | 2.80 | 100% |
| Parking Lot | 3.30 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 2025 | 0.00 | 532 | 0.03 | < 0.005 |
| 2026 | 0.00 | 532 | 0.03 | < 0.005 |

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 103 | 103 | 103 | 37,436 | 921 | 921 | 921 | 336,238 |
| General Office Building | 27.2 | 27.2 | 27.2 | 9,933 | 244 | 244 | 244 | 89,218 |
| General Office Building | 27.2 | 27.2 | 27.2 | 9,933 | 244 | 244 | 244 | 89,218 |
| Unrefrigerated Warehouse-No Rail | 103 | 103 | 103 | 37,436 | 921 | 921 | 921 | 336,238 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

### 5.9.2. Mitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 103 | 103 | 103 | 37,436 | 921 | 921 | 921 | 336,238 |
| General Office Building | 27.2 | 27.2 | 27.2 | 9,933 | 244 | 244 | 244 | 89,218 |
| General Office Building | 27.2 | 27.2 | 27.2 | 9,933 | 244 | 244 | 244 | 89,218 |
| Unrefrigerated Warehouse-No Rail | 103 | 103 | 103 | 37,436 | 921 | 921 | 921 | 336,238 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

#### 5.10.1.2. Mitigated

### 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|
| 0 | 0.00 | 227,682 | 75,894 | 15,941 |

### 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 180 |

### 5.10.4. Landscape Equipment - Mitigated

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 180 |

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 277,025 | 532 | 0.0330 | 0.0040 | 1,140,242 |
| General Office Building | 277,747 | 532 | 0.0330 | 0.0040 | 436,708 |
| General Office Building | 277,747 | 532 | 0.0330 | 0.0040 | 436,708 |
| Unrefrigerated Warehouse-No Rail | 277,025 | 532 | 0.0330 | 0.0040 | 1,140,242 |
| Parking Lot | 106,850 | 532 | 0.0330 | 0.0040 | 0.00 |
| Parking Lot | 125,888 | 532 | 0.0330 | 0.0040 | 0.00 |

### 5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 277,025 | 532 | 0.0330 | 0.0040 | 1,140,242 |
| General Office Building | 277,747 | 532 | 0.0330 | 0.0040 | 436,708 |
| General Office Building | 277,747 | 532 | 0.0330 | 0.0040 | 436,708 |
| Unrefrigerated Warehouse-No Rail | 277,025 | 532 | 0.0330 | 0.0040 | 1,140,242 |
| Parking Lot | 106,850 | 532 | 0.0330 | 0.0040 | 0.00 |
| Parking Lot | 125,888 | 532 | 0.0330 | 0.0040 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 13,870,144 | 594,730 |
| General Office Building | 2,828,633 | 0.00 |
| General Office Building | 2,828,633 | 0.00 |
| Unrefrigerated Warehouse-No Rail | 13,870,144 | 1,292,647 |

| | | |
|---|---|---|
| Parking Lot | 0.00 | 0.00 |
| Parking Lot | 0.00 | 0.00 |

### 5.12.2. Mitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 13,870,144 | 594,730 |
| General Office Building | 2,828,633 | 0.00 |
| General Office Building | 2,828,633 | 0.00 |
| Unrefrigerated Warehouse-No Rail | 13,870,144 | 1,292,647 |
| Parking Lot | 0.00 | 0.00 |
| Parking Lot | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 56.4 | — |
| General Office Building | 14.8 | — |
| General Office Building | 14.8 | — |
| Unrefrigerated Warehouse-No Rail | 56.4 | — |
| Parking Lot | 0.00 | — |
| Parking Lot | 0.00 | — |

### 5.13.2. Mitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Unrefrigerated Warehouse-No Rail | 56.4 | — |
| General Office Building | 14.8 | — |

| | | |
|---|---|---|
| General Office Building | 14.8 | — |
| Unrefrigerated Warehouse-No Rail | 56.4 | — |
| Parking Lot | 0.00 | — |
| Parking Lot | 0.00 | — |

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430 | 0.02 | 0.60 | 0.00 | 1.00 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430 | 0.02 | 0.60 | 0.00 | 1.00 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |

### 5.14.2. Mitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430 | 0.02 | 0.60 | 0.00 | 1.00 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |
| General Office Building | Household refrigerators and/or freezers | R-134a | 1,430 | 0.02 | 0.60 | 0.00 | 1.00 |
| General Office Building | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.15.2. Mitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

| Equipment Type | Fuel Type | Number per Day | Hours per Day | Hours per Year | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.16.2. Process Boilers

| Equipment Type | Fuel Type | Number | Boiler Rating (MMBtu/hr) | Daily Heat Input (MMBtu/day) | Annual Heat Input (MMBtu/yr) |
|---|---|---|---|---|---|

## 5.17. User Defined

| Equipment Type | Fuel Type |
|---|---|
| — | — |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

#### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

#### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

#### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 33.6 | annual days of extreme heat |
| Extreme Precipitation | 4.95 | annual days with precipitation above 20 mm |

| | | |
|---|---|---|
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 22.7 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 4 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | N/A | N/A | N/A | N/A |
| Wildfire | N/A | N/A | N/A | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | 0 | 0 | 0 | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 4 | 1 | 1 | 4 |

| | | | | |
|---|---|---|---|---|
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | N/A | N/A | N/A | N/A |
| Wildfire | N/A | N/A | N/A | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | 1 | 1 | 1 | 2 |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 97.1 |
| AQ-PM | 46.5 |
| AQ-DPM | 33.3 |
| Drinking Water | 36.2 |
| Lead Risk Housing | 3.47 |
| Pesticides | 9.59 |
| Toxic Releases | 30.1 |
| Traffic | 62.7 |
| Effect Indicators | — |

| | |
|---|---|
| CleanUp Sites | 0.00 |
| Groundwater | 0.00 |
| Haz Waste Facilities/Generators | 50.1 |
| Impaired Water Bodies | 0.00 |
| Solid Waste | 0.00 |
| Sensitive Population | — |
| Asthma | 44.6 |
| Cardio-vascular | 79.7 |
| Low Birth Weights | 71.6 |
| Socioeconomic Factor Indicators | — |
| Education | 58.7 |
| Housing | 2.26 |
| Linguistic | — |
| Poverty | 44.2 |
| Unemployment | 65.6 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 53.94584884 |
| Employed | 18.74759399 |
| Median HI | 61.27293725 |
| Education | — |
| Bachelor's or higher | 29.93712306 |
| High school enrollment | 100 |
| Preschool enrollment | 9.29038881 |
| Transportation | — |

| | |
|---|---|
| Auto Access | 73.42486847 |
| Active commuting | 1.039394328 |
| Social | — |
| 2-parent households | 68.54869755 |
| Voting | 50.18606442 |
| Neighborhood | — |
| Alcohol availability | 91.41537277 |
| Park access | 22.16091364 |
| Retail density | 7.930193764 |
| Supermarket access | 17.18208649 |
| Tree canopy | 1.437187219 |
| Housing | — |
| Homeownership | 78.81432054 |
| Housing habitability | 80.41832414 |
| Low-inc homeowner severe housing cost burden | 74.86205569 |
| Low-inc renter severe housing cost burden | 40.84434749 |
| Uncrowded housing | 81.14974978 |
| Health Outcomes | — |
| Insured adults | 54.27948159 |
| Arthritis | 86.8 |
| Asthma ER Admissions | 56.5 |
| High Blood Pressure | 89.6 |
| Cancer (excluding skin) | 85.3 |
| Asthma | 34.7 |
| Coronary Heart Disease | 90.3 |
| Chronic Obstructive Pulmonary Disease | 71.2 |
| Diagnosed Diabetes | 72.3 |
| Life Expectancy at Birth | 20.3 |

| | |
|---|---|
| Cognitively Disabled | 60.3 |
| Physically  Disabled | 65.4 |
| Heart Attack ER Admissions | 33.6 |
| Mental Health Not Good | 38.2 |
| Chronic Kidney Disease | 79.8 |
| Obesity | 34.9 |
| Pedestrian Injuries | 74.7 |
| Physical Health Not Good | 52.6 |
| Stroke | 84.7 |
| Health Risk Behaviors | — |
| Binge Drinking | 12.7 |
| Current Smoker | 37.0 |
| No Leisure Time for Physical Activity | 54.9 |
| Climate Change Exposures | — |
| Wildfire Risk | 0.0 |
| SLR Inundation Area | 0.0 |
| Children | 35.2 |
| Elderly | 80.7 |
| English Speaking | 70.4 |
| Foreign-born | 22.2 |
| Outdoor Workers | 36.3 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 88.5 |
| Traffic Density | 69.0 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 53.9 |
| Other Decision Support | — |

| | |
|---|---|
| 2016 Voting | 53.6 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 39.0 |
| Healthy Places Index Score for Project Location (b) | 42.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Land Use | Truck Warehouse Building 1: 75,894 sq ft.<br>Surface Parking Lot for Truck Warehouse Building 1: 121,975 sq ft.<br>Landscaping: 26,864 sq ft.<br>Total Developed Area for Truck Warehouse 1: 224,733 sq ft.<br>Truck Warehouse Building 2: 75,894 sq ft.<br>Surface Parking Lot for Truck Warehouse Building 2: 143,708 sq ft.<br>Landscaping: 58,389 sq ft.<br>Total Developed Area for Truck Warehouse 2: 277,991 sq ft. |
| Construction: Construction Phases | Revised construction is estimated to take place from October 2025 till November 2026. |

| | |
|---|---|
| Construction: Off-Road Equipment | Provided by client and added defaults for paving and architectural coating. Off-site phase- Trenching- 2 excavators, 2 loaders/tractors/backhoes. |
| Operations: Vehicle Data | Trip rate has been adjusted based on the results of the traffic study. Total trips would be 260 vehicles/day. |
| Operations: Fleet Mix | HHD LDA LDT1 LDT2 LHD1 LHD2 MCY MDV MH MHD OBUS SBUS UBUS TOTAL<br>Warehouse + Office TRIPS 29 84 0 0 0 0. 0 0 0 17 0 0 0 130<br>% 22.31 64.62 0 0 0 0 0 0 0 13.07 0 0 0 100 |
| Operations: Refrigerants | — |

# APPENDIX C1

# BIOLOGICAL RESOURCES EVALUATION

# BIOLOGICAL RESOURCES EVALUATION FOR THE CARGO SOLUTIONS TRUCK WAREHOUSE PROJECT

## HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA



**Prepared for:**
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**9700 Seventh Ave.**
**Hesperia, CA 92345**

*Prepared by:*

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## 1.0 INTRODUCTION

UltraSystems Environmental, Inc. (UltraSystems) has been retained by Cargo Solutions to prepare this biological resources evaluation (BRE) report. This BRE documents the methods and results of the literature review and field survey of the biological resources potentially associated with the project site and of areas within a 500-foot zone around the project site; collectively, this area is referred to as the Biological Study Area (BSA). This BRE provides a summary of existing conditions, an assessment of the potential presence of sensitive biological resources, an analysis of the potential impacts to those resources from project construction and development and a discussion of recommended mitigation measures to minimize or avoid potential impacts to biological resources. It summarizes the biological resources present within the BSA at the time of the field survey including plant communities, land cover types, the potential occurrence of special-status plant and wildlife species, critical habitat, and wildlife corridors.

As mentioned above, a literature review and reconnaissance-level field survey were conducted to evaluate the potential impacts of construction of the project on the existing biological resources within the BSA. This BRE presents the results of the analysis in the following sections: Regulatory Context, Methods, Results, Potential Impacts, and Mitigation Measures.

Plant and wildlife species listed under the federal Endangered Species Act (ESA) or under the California Endangered Species Act (CESA) as endangered, threatened or as a candidate for listing will be referred to collectively as "listed species" in this document. Plant and wildlife species not listed under ESA or CESA but still protected by federal agencies or state agencies, and/or conservation organizations such as the California Native Plant Society (CNPS), are collectively referred to as "sensitive species" in this document. The term "special-status species" will be used when collectively referring to both listed and sensitive species. Some of these plant and wildlife species are afforded special legal or management protection because they are declining in population size, and/orhave a limited geographic range, and/or are constrained to fragmented, reduced-quality habitat.

This report also identifies and analyzes the potential biological significance of site construction and development in view of federal, state, and local laws, regulations, policies, orders, ordinances and/or management plans. Finally, it recommends, as appropriate, mitigation measures (best management practices [BMPs], avoidance and protection measures, and mitigation measures) to minimize or avoid potential environmental impacts to less than significant levels.

The study of biological resources associated with the BSA was conducted to comply with the California Environmental Quality Act (CEQA) requirements for a biological evaluation of projects that would potentially impact natural resources. CEQA is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This report is intended to satisfy the biological resource needs of the CEQA process. This report will also assist federal and state resource agencies in their review of the project and support permits required for the project from these resource agencies.

## 1.1 Project Location

The project site is located in southwestern San Bernardino County in the City of Hesperia (City), and lies within the United States Geological Survey (USGS) 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle (see **Appendix A**, Figure 1, *Regional Location;* Figure 2, *Project Vicinity*) The project site is directly south of Poplar Street between Three Flags Avenue and Mesa Linda Street (see **Appendix A**, Figure 3, *Project Boundary and Biological Study Area* [*BSA*]). The BSA's elevation ranges from approximately 3,606 to 3,620 feet above mean sea level (amsl) [see **Appendix A**, Figure 4, *Topographic Map*; Google Earth Pro, 2022].

The project site is located in the jurisdiction of the following resource agency field offices:

- **United States Fish and Wildlife Service (USFWS)**
  **Palm Springs Fish and Wildlife Office**
  777 E. Tahquitz Canyon Way, Suite 208
  Palm Springs, CA 92262
  Phone: (760) 322-2070

- **California Department of Fish and Wildlife (CDFW)**
  **Inland Desert Region 6**
  3602 Inland Empire Boulevard, Suite C-220
  Ontario, CA 91764
  Phone: (909) 484-0167

- **United States Army Corps of Engineers (USACE)**
  **Los Angeles District**
  915 Wilshire Boulevard, Suite 980
  Los Angeles, CA 90017
  Phone: (213) 452-3908/3333

- **San Bernardino County**
  **Department of Public Works**
  **Environmental Management Division**
  825 E. Third Street
  San Bernardino, CA 92415-0835
  Phone:(909)-387-8109

- **Regional Water Quality Control Board (RWQCB**
  **Lahontan Region (Region 6)**
  15095 Amargosa Road, Building 2, Suite 210,
  Victorville, CA 92394
  Phone: (760) 241-6583

- **City of Hesperia Planning Department**
  9700 Seventh Ave
  Hesperia, CA 92345
  Phone: (760) 947-1224

## 1.2 Project Description

The City of Hesperia (City) is processing a request to implement a series of discretionary actions that would ultimately allow for the development of a truck warehouse development (project) at the southeast intersection of Poplar Street and Three Flags Avenue in the City of Hesperia in San Bernardino County, California (APNs: 3064-591-17, -18, -12, and -13 and 3064-631-01). The project proposes development of two truck warehouses and a surface parking lot on an approximately 20.32-acre site. The City is the Lead Agency for the CEQA purposes.

The entire 20.32-acre project site is currently undeveloped land. The project site is located in a semi-rural, lightly developed portion of the city with undeveloped land to the north; industrial, commercial, and undeveloped land uses to the south; the Interstate 15 (I-15) freeway to the east; and commercial and undeveloped land uses to the west (Google Earth Pro, 2022)

The project would consist of: (1) construction of two warehouse and office buildings; (2) construction of one drive-thru truck wash building; (3) surface parking lot; (4) utilities improvements; and (5) landscaping. (see **Appendix B**, *Site Plans*).

# 2.0 REGULATORY CONTEXT

## 2.1 Federal Statutes, Regulations, and Executive Orders

### 2.1.1 Section 401 Clean Water Act (CWA)

Although the Clean Water Act (CWA) is a federal law, Section 401 of that law recognizes that states have the primary authority and responsibility for setting surface- and groundwater water quality standards.

Section 401 is implemented through a Water Quality Certification (WQC) process. In the State of California, the State Water Quality Resources Board (SWRCB) has given the responsibility for issuing Section 401 WQCs to its nine Regional Water Quality Control Boards (RWQCBs), unless a discharge of dredged or fill material is proposed within more than one region. In the event that a project proposes discharges of dredged or fill material in more than one region, responsibility for issuance of a Section 401 WQC will lie either with the SWRCB, or, upon agreement of the RWQCBs for the affected regions, with the RWQCB chosen in the discretion of the RWQCBs. Cal. Water Code, § 13160; Cal. Code Regs., tit. 23, § 3838. Certification must be based on a finding that the proposed discharge will comply with water quality standards, which include numeric and narrative water quality objectives applicable to identified surface waters in the Water Quality Control Plan for the region (Basin Plan) in which a discharge of fill is proposed.

### 2.1.2 Section 404 Clean Water Act

Section 404 CWA requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), for the discharge of dredged or fill material into all waters of the United States, including wetlands. Authorizations are conducted through the issuance of Nationwide (or

General) Permits, for activities that would cause only minimal permanent individual (between 0.1 and 0.5 acre) and cumulative impacts; through Individual (or Standard) Permits for activities that are likely to have more than a minimal permanent (greater than 0.5 acre) or cumulative impact on aquatic resources; and through Letters of Permission (LOPs) which are a type of individual permit issued through an abbreviated process that includes coordination with federal and state fish and wildlife agencies and a public interest evaluation, but without the 30-day permit notice period that is required for Individual Permits. The Los Angeles District of the USACE would provide review and permitting services for this project.

Wetlands and other waters that do not meet the definition of waters of the U.S. are not covered by the CWA; however, they are regulated by the State of California through the Porter-Cologne Water Quality Control Act (Porter-Cologne) and SWRCB Resolution No. 2019-0015 for California (SWRCB, 2019).

### 2.1.3 Endangered Species Act (ESA)

The federal Endangered Species Act of 1973 (Title 16, United States Code [U.S.C.] Sections (§§) 1531-1543) (ESA), as amended, designates and provides for protection of listed threatened and endangered plant and animal species, and their critical habitat. The USFWS, in the Department of the Interior, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), in the Department of Commerce, share responsibility for administration of the ESA. These responsibilities include listing and delisting species, designating critical habitat, and formulating recovery plans. The ESA is divided into 18 sections that work together to prevent species from going extinct by helping to stabilize populations, reduce the threats to their survival, and to help species recover to the point that they no longer require federal protection.

**Section 4 (Determination of Endangered Species and Threatened Species):**

Section 4 of the ESA addresses listing of species in need of the ESA's protection. Species are listed as either endangered or threatened under Section 4 of the ESA. A federally-endangered species is one that is facing extinction throughout all or a significant portion of its range. A federally-threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Under Section 4, actions needed to recover those species and conserve their habitats are also identified, along with a process for reaching recovery goals that allow for a species' removal from federal protection. The presence on a project site of any fish or wildlife species that is federally listed as endangered or threatened generally imposes constraints on development to the extent that development is likely to result in a prohibited "take" of the species or substantial adverse modification of its habitat as described below.

**Section 7 (Interagency Cooperation):**

Two sections of the ESA (§§ 7 and 10) authorize incidental take. Section 7 of the ESA regulates take associated with federal projects or projects that require a federal permit. It also requires federal agencies to use their authority to carry out conservation programs to benefit endangered and threatened species. Under § 7, federal agencies are required to consult with the USFWS or the NMFS to ensure that any action they carry out, including those they fund or authorize (such as through a

permit) will not likely jeopardize the continued existence of listed species, or result in the destruction or adverse modification of proposed or designated critical habitat of such species. Under § 7, consultations can either be informal or formal.

**Section 9 (Prohibited Acts):**

Once a species is listed, Section 9 of the ESA makes it unlawful for any person, including private and public entities, to "take species listed as endangered or without a permit issued pursuant to Section 10 or an incidental take statement issued pursuant to Section 7. Section 9 defines "take" as "*to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct*." The term "harm" is defined as "*an act which actually kills or injures wildlife. Such an act may include substantial habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering*."

Take prohibitions of Section 9 of the ESA apply to listed wildlife and fish species, but not to plants. Endangered plants are not protected from take, although it is unlawful to remove, possess, or maliciously damage or destroy them on federal lands. Removing or damaging listed plants on state and private lands in knowing violation of state law, or in the course of violating a state criminal trespass law, also is illegal under the ESA.

**Section 10 (Incidental Take Permits and Habitat Conservation Plans):**

An incidental take permit pursuant to Section 10(a)(1)(B) is required when non-Federal, otherwise lawful activities, including lawful project development, will result in take of threatened or endangered wildlife. Under this provision, the USFWS and/or NMFS may, where appropriate, authorize the taking of federally listed wildlife or fish if such taking occurs incidentally during otherwise legal activities. Section 10(a)(2)(B) requires an application for an incidental take permit to include a HCP. The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate avoidance, minimization and mitigation measures to address the effects of the authorized incidental take. Section 10 provides a clear regulatory mechanism to permit the incidental take of federally listed fish and wildlife species by private interests and non-Federal governmental agencies.

### 2.1.4 Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, U.S.C. Sections 703 - 712), as amended, implements various treaties and conventions between the United States (U.S.) and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. Take is defined in regulations implementing the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. The USFWS' Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally listed threatened or

endangered migratory birds, bald eagles, and golden eagles. Take under the MBTA does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA

## 2.2 State Statutes and Regulations

### 2.2.1 California Environmental Quality Act

The California Environmental Quality Act of 1970 (Title 14, California Code of Regulations, §§ 15002-15387) (CEQA) is California's broadest environmental law (California Legislative Information, 2022a). CEQA applies to certain activities of state and local public agencies. It requires lead agencies (i.e., those making land use decisions) as well as any other responsible state agencies issuing discretionary permits, to evaluate and disclose the significance of all potential environmental impacts of a project. The lead agency is also responsible for identifying, negotiating and implementing feasible impacts avoidance, minimization, or mitigation measures that reduce and compensate for significant environmental impacts with the goal of reducing those impacts to less than significant levels. Lead agencies determine significance on a project-by-project basis because they must consider all potential risk, including cumulative impacts, within a local and regional context, as well as evaluate unique factors particular to the project area when exercising their discretion to approve or disapprove a project.

The CEQA Guidelines specify that a project has a significant impact on the environment if, among other things, it has the potential to "substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or an animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species…." [CEQA Guidelines § 15065(a)(1)] (AEP, 2022).

The purpose of CEQA is to:

- Disclose to the public the significant environmental impacts of a proposed discretionary project, through the preparation of an Initial Study, Negative Declaration, or Environmental Impact Report.
- Prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring.
- Disclose to the public the agency decision making process utilized to approve discretionary projects through findings and statements of overriding consideration.
- Enhance public participation in the environmental review process through scoping meetings, public notice, public review, hearings, and the judicial process.
- Improve interagency coordination through early consultations, scoping meetings, notices of preparation, and State Clearinghouse review.

### 2.2.2 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) (California Fish and Game Code §§ 2050-2089) was enacted in 1984 to parallel the federal ESA and allows the Fish and Game Commission to designate

species, including plants, as threatened or endangered (California Legislative Information, 2022a). The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Unlike the ESA, the CESA does not include listing provisions for invertebrate species.

CESA makes it illegal to import, export, take, possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by CDFW. Section 2080 of the California Fish and Game Code prohibits take of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in § 86 of the California Fish and Game Code as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill*." (CDFW, 2021)

Under CESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for incidental take are that the take is minimized and fully mitigated, adequate funding is ensured for this mitigation, and that the activity will not jeopardize the continued existence of the species. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species populations and their essential habitats.

### 2.2.3 Fully Protected Species - California Fish and Game Code § 3511, § 4700, § 5050 and § 5515

The classification of fully protected was the State of California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for birds (§ 3511), mammals (§ 4700), amphibians and reptiles (§ 5050), and fish (§ 5515). Fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for scientific research and relocation of the species for certain purposes. "Take" is defined in § 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under § 2835 of the Fish and Game Code, CDFW may only issue permits allowing incidental take of fully protected species if a NCCP is prepared that provides for the protection of that species in accordance with the requirements and standards applicable to NCCPs (Fish and Game Code §§ 2800-2835). Alternatively, avoidance measures sufficient to prevent incidental take of fully protected species must be incorporated into project design, and construction plans and operations. The MSHCP is an HCP and a NCCP, and includes incidental take authorization pursuant to Fish and Game Code § 2085, but the MSHCP does not authorize take of fully protected species.

### 2.2.4 Bird Nests and Eggs - California Fish and Game Code § 3503

California Fish and Game Code § 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take. Avoidance measures sufficient to

prevent incidental take of bird nests and eggs protected by this statute must be incorporated into project design, and construction plans and operations.

### 2.2.5 Migratory Birds – California Fish and Game Code § 3513

California Fish and Game Code § 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the MBTA, except as authorized in regulations adopted by the federal government under provisions of the MBTA. Except as permitted by USFWS, avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into project design, and construction plans and operations.

### 2.2.6 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) defines water quality objectives as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisances within a specific area." Thus, water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both waters of the U.S. and waters of the State. In the State of California, Porter-Cologne is administered in concurrence with § 401 CWA WQC.

### 2.2.7 State Water Resources Control Board Resolution No. 2019-0015

The California Code of Regulations, Title 23, Section 3831(w) states that "[a]ll waters of the United States are also 'waters of the state.'" This regulation has remained in effect despite Supreme Court decisions such as Rapanos and SWANCC, which added limitations to what could be considered a water of the U.S. Because the interpretation of waters of the U.S. in place at the time § 3831(w) was adopted was broader than any post-Rapanos or post-SWANCC regulatory definitions that incorporated more limitations into the scope of federal jurisdiction, it is consistent with the Water Boards' intent to include both historic and current definitions of waters of the U.S. into the SWRCBs wetland jurisdictional framework.

As set forth in Resolution No. 2009-0026, although the state of California has historically relied primarily on requirements in the Clean Water Act to protect wetlands, U.S. Supreme Court rulings reducing the jurisdiction of the Clean Water Act over wetland areas by limiting the definition of "waters of the United States" necessitated the use of California's independent authorities under the Porter-Cologne Act to protect these vital resources.

The inclusion of both current and historic definitions of "waters of the U.S." ensures some regulatory stability in an area that has otherwise been in flux. The status of a water of the U. S. may only be used to establish that a wetland or water qualifies as a water of the State; it cannot be used to exclude a wetland or water from qualifying as a water of the State. In other words, wetlands that are categorically excluded from qualifying as a water of the U.S. may nevertheless qualify as waters of the State under another jurisdictional category. Examples of waters of the State include (but are not limited to) ephemeral streams and isolated wetlands.

On April 2, 2019, the SWRCB adopted Resolution No. 2019-0015, Amendment to the Water Quality Control Plan for Ocean Waters of California and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California to Establish a State Wetland Definition and Procedures for Discharges of Discharges of Dredged or Fill Material to Waters of the State (Procedures). for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. As they apply to this project, the Procedures provide the SWRCB and its nine RWQCBs to approve a project only if the applicant has demonstrated certain requirement. (SWRCB, 2019).

On April 6, 2021, the SWRCB issued Resolution No. 2021-0012 confirming that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" (1) are in effect as state policy for water quality control for all waters of the State and (2) shall be applied via the inland surface waters and enclosed bays and estuaries plan to only waters of the United States.

When a discharge is proposed to waters outside of federal jurisdiction, the SWRCB and the RWQCBs regulate the discharge under Porter-Cologne through the issuance of Water Discharge Requirements (WDRs). WDRs and waivers of WDRs are referred to as orders or permits. The SWRCB and its nine RWQCBs have the authority to regulate the discharge of dredged or fill material under Resolution Nos. 2019-0015 and 2021-0012. Dischargers that do not require a federal permit or license that authorizes impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as § 404 CWA and § 10 of the Safe Rivers and Harbors Act, must obtain a WDR or a waiver of a WDR from the SWRCB or RWQCB to ensure that the discharge does not violate state water quality standards or any other appropriate requirement of State law.

**Basin Plans**

The SWRCB requires its nine RWQCBs to develop water quality control plans (Basin Plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations. This project is under the jurisdiction of the Lahontan RWQCB.

**Construction Stormwater Program**

The SWRCB implements water quality regulations under the federal CWA and Porter-Cologne and requires compliance with the National Pollutant Discharge Elimination System (NPDES) for discharges of stormwater runoff associated with a construction activity.

Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-009-DWQ, as amended). Construction Activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation,

but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns. The SWRCB will provide Construction General Permit review and permitting services for this project.

### 2.2.8 Lake or Streambed Alteration Agreement

Sections 1600-1617 FGC of the California Fish and Game Code (FGC) protect the natural flow and the bed, channel, and bank of any river, stream, or lake designated by the CDFW which is at any time an existing fish or wildlife resource, or a waterbody from which these resources derive benefit. General project plans must be submitted to CDFW in sufficient detail to indicate the nature of the project proposed for construction, if the project would:

- Divert, obstruct, or change a streambed;
- Use material from the streambeds;
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

The Inland Deserts Region (Region 6) of the CDFW serves San Bernardino County and would provide LSA Notification Review and Agreement services for this project.

### 2.2.9 Natural Community Conservation Planning Act of 2003 (NCCP Act)

The California Natural Community Conservation Planning Act (NCCP Act) was enacted to encourage broad-based planning to provide for effective protection and conservation of the State's wildlife resources while continuing to allow appropriate development and growth (California Fish and Game Code §§ 2800 to 2835). NCCPs may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses. An approved NCCP enables the California Department of Fish and Wildlife to authorize take of species consistent with the NCCP Act and California Fish and Game Code § 2835.

## 2.3 Local Policies and Ordinances

### 2.3.1 City Municipal Code, Title 16 – Development, Chapter 16.24

The City aims to promote conservation efforts of native desert plants through regulation, guidelines and enforcement that provides for the management and the removal or harvesting of such plants. They are also necessary to augment and coordinate with the State Department of Food and Agriculture in its efforts to implement and enforce the Desert Native Plant Act. The provisions of Chapter 16.24 apply to "*all private land within the city and to public lands owned by the city except as specified by the provisions of this chapter*". Article II Section 16.24.150 provides that "*all plants*

*protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits.*" In addition, the preparation and submission of a Protected Plant Preservation Plan is required by City municipal code. (City of Hesperia; 1997). Native desert vegetation addressed under the municipal code as per Article II Section 16.24.150 include the following, which would require a permit for removal as per Section 16.24.040:

> *1. "The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:*
> *(a)Dalea, Spinosa (smoketree)*
> *(b) All species of the family Agavaceae (century plants, nolinas, yuccas)*
> *(c) All species of the genus Prosopis (mesquites).*
>
> *2. Creosote rings, ten feet or greater in diameter.*
> *3. All Joshua trees (mature and immature)."*

# 3.0 METHODS

## 3.1 Literature Review

Prior to the field survey, biologists conducted a literature review to identify habitats, special-status plant and wildlife species, critical habitats, and wildlife movement corridors potentially associated with the project site. Biologists reviewed relevant literature, databases, agency web sites, reports and management plans, Geographic Information System (GIS) data, maps, and aerial imagery obtained from public domain sources. The review also helped to determine which biological surveys may be required prior to site construction and development. The following resources were utilized in order to conduct the literature search:

### 3.1.1 Sensitive Plant Communities and Special-Status Species

The data sources described below were reviewed to generate a list of special-status plants and wildlife with reported occurrences within the vicinity of the BSA. The literature review and query of the databases for reported locations of sensitive plant communities and special-status species helped to identify the known locations of these resources in the project region and assisted in identifying the potential for onsite occurrence of such species.

- CDFW's California Natural Diversity Database (CNDDB) was used to identify sensitive plant communities and special-status species documented within a ten-mile radius of the project site (CNDBB, 2022a)
- The USFWS' Information, Planning, and Conservation (IPaC) system was used to identify listed plant and wildlife species reported within the vicinity of the BSA (USFWS, 2022a).
- Previous consultant studies and reports near the project site and project vicinity were reviewed to gain a sense of the existing conditions at the time the studies were conducted.
- Google Earth Pro satellite imagery of the project site and vicinity (Google Earth Pro, 2022)

- The Natural Resources Conservation Service's (NRCS's) Custom Soil Resource Report for the BSA downloaded from the Web Soil Survey (Soil Survey Staff, 2022)
- USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle (USGS, 2015)

**Sensitive Plant Communities**

CDFW defines sensitive plant communities as "communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental impacts of projects" (CDFW, 2018). These communities are a valuable biological resource due to their rarity and/or their provision of habitat for special-status species. The most current version of CDFW's *California Natural Community List* indicates which natural communities are sensitive given the current state of the California classification (CDFW, 2022a). The *California Natural Community List* includes alliance rankings according to their degree of imperilment. For this BRE, plant communities are considered sensitive if they meet any of the following criteria:

- Recognized and considered sensitive by CDFW, USFWS, and/or special interest groups such as the CNPS, or local municipalities such as the City.
- Habitat is under the jurisdiction of the USACE pursuant to Section 404 of the CWA and/or is under the jurisdiction of the CDFW pursuant to §§ 1600-1612 of the California Fish and Game Code.
- Known or believed to be of high priority for inventory in the CNDDB.
- Considered to be regionally rare.
- Has undergone a large-scale reduction due to increased encroachment and development.
- Supports special-status plant and/or wildlife species.
- Functions as an important corridor for wildlife movement.

**Special Status Plants**

A literature review and query from publicly available databases was conducted for reported occurrences within a ten-mile radius of the project site (plant inventory). The following resources were used to analyze plant species potential to occur within the BSA:

- Rare Plant Program, Inventory of Rare and Endangered Plants (CNPS, 2022a)
- California Natural Diversity Database (CNDDB, 2022a)
- USFWS Information for Planning and Consultation (USFWS, 2022a)
- Jepson Flora Project (Jepson eFlora, 2022)
- Information on California Plants (Calflora, 2022)

**Special-Status Wildlife:**

A literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a) was conducted for reported occurrences within a ten-mile radius of the project site. The following resources were used to analyze wildlife species potential to occur within the BSA:

- All About Birds (Cornell Lab of Ornithology, 2022)

- USFWS Information for Planning and Consultation (USFWS, 2022a)
- USFWS ECOS species profiles (USFWS, 2022b)
- CDFW California Wildlife Habitat Relationships Life History Accounts and Habitat Range Maps (CDFW, 2022b)

### 3.1.2 Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

Aerial imagery was reviewed to identify natural and man-made drainages, open water (lakes, ponds, etc.), wetlands and other features that may be subject to federal or state jurisdictional authority within the BSA. The USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle was reviewed to identify potential presence or absence of onsite and offsite watercourses, and topographic features than may be indicative of water features. Topographic maps do not show all drainages that may exist.

The National Wetlands Inventory (NWI) database and maps developed by the USFWS were used as preliminary indicators of potential wetland areas based on changes in vegetation patterns as observed from satellite imagery (USFWS, 2022c). The NWI data were viewed in GIS platforms (Google Earth Pro, 2022), including the USFWS Wetlands Mapper (USFWS 2022c) to identify potentially jurisdictional features within the project area as indicated from topographic changes or visible stream patterns. The digital wetland data for the project vicinity was later ground-truthed during biological surveys.

The USGS National Hydrography Dataset (NHD) was also used to identify hydrologic features such as rivers, streams, canals, lakes, and ponds. (USGS, 2022).

Additionally, the watershed boundary data set containing the most current 10-digit and 12-digit HUCs was obtained in geodatabase form from the USGS to aid with assessing USACE jurisdiction of waters draining the project site (USGS, 2022)

The following were also reviewed and consulted:

- *Corps of Engineers Wetlands Delineation Manual (i.e.,1987 Manual; Environmental Laboratory, 1987).*
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008) (referred to as Arid West Supplement in this BRE)*
- *The National Wetland Plant List 2018 List (USACE, 2018).*
- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley, 2008).*
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar, 2010).*
- *United States Department of Agriculture National Resources Conservation Service Hydric Soils List (USDA-NRCS, 2022).*
- Waters Geoviewer, (USEPA, 2022)

The USACE published the *1987 Manual* for the identification and delineation of wetlands which have since been superseded and presented in regional supplements. In 2008, the USACE published the

Arid West Supplement, which is a supplement to the *1987 Manual* that describes wetland indicators, delineation guidance, and other information that is specific to the arid west region (USACE, 2008). The 1987 Manual and the Arid West Supplement are collectively referred to herein as the 1987 Manual.

### 3.1.3 Critical Habitat

When a species is listed as federally endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. Under the ESA, the federal government is required to designate "critical habitat" for each species it lists under the ESA. Federal agencies are prohibited from authorizing, funding or carrying out actions that "destroy or adversely modify" critical habitats. Section 3 of the ESA defines critical habitat for a threatened or endangered species as [ESA § 3(5)(A)]:

- *The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of § 4 of the ESA, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection*; and
- *Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of § 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species*.

Designated critical habitats are described in 50 CFR Parts 17 and 226. Critical habitat may include areas that are not currently occupied by the species, but that will be needed for its recovery. In addition, the USFWS normally excludes developed areas within mapped critical habitat boundaries as critical habitat. Within areas occupied by a listed species, the following factors indicate critical habitat (USFWS, 2022d):

- *space for individual and population growth and for normal behavior*;
- *cover or shelter*;
- *food, water, air, light, minerals, or other nutritional or physiological requirements*;
- *sites for breeding and rearing offspring*; and
- *habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of a species*.

The USFWS' Critical Habitat Portal and IPaC were reviewed to identify federal threatened and endangered species designated final and proposed critical habitat designations within ten miles of the project site (USFWS, 2022a, d).

### 3.1.4 Wildlife Corridors

To determine the potential for the BSA to contain wildlife corridors, UltraSystems biologists reviewed the USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle and viewed aerial imagery to search for physical features that might serve as a wildlife corridor. Biologists also used the BIOS Habitat Connectivity Viewer to search for CDFW Essential Connectivity Areas, and Natural Landscape

Blocks within the vicinity of the BSA (CDFW, 2022c). In addition, biologists used GIS software (Google Earth Pro, 2022) to determine the project site's location in relation to areas that could serve as wildlife corridors. Finally, the literature review also included maps and reports on wildlife home ranges and migration and dispersal patterns (CDFW, 2014).

### 3.1.5 Local Policies and Ordinances

The City's municipal ordinances, general plan and other documents were reviewed. The purpose of reviewing these documents was to determine if any City regulations protected resources not covered by federal or state regulatory agencies, or if City regulations had more stringent protections of biological resources protected by state or federal regulatory agencies.

## 3.2 Field Survey Methods

This section describes the field survey methods used by a UltraSystems biologist, Dr. Michael Tuma (biologist; Dr. Tuma), within the BSA during the reconnaissance-level biological survey. Dr. Tuma visited the BSA to conduct the following assessments during the survey:

- Habitat assessment and land cover type mapping
- Sensitive plant community assessment
- General plant survey
- General wildlife survey
- Jurisdictional waters/wetlands assessment
- Wildlife movement evaluation
- Step 1: Burrowing owl and desert tortoise habitat assessment

The purposes of the field work were to evaluate the initial results of the literature review and to collect additional data on existing site conditions. The general biological survey covered accessible areas of the BSA, including areas that will be impacted by the project. The survey was conducted during the daytime on foot by walking slowly across each habitat type, where accessible. The UltraSystems biologist used binoculars from strategic vantage points whenever direct access was not possible due to private property with no access rights, chain-linked fences, and locked gates. Observations were also made with aerial imagery for inaccessible areas.

During the survey, the UltraSystems biologist used topographic and aerial maps to help navigate in the field and pertinent regional flora and fauna field guides to identify and record special-status species and to assist with identifying plant communities, wildlife habitats, and physical features. Digital color photographs were taken during the field surveys to record site conditions at the time of the field surveys. Specific methods for each type of biological assessment are described in the sections below.

### 3.2.1 Habitat Assessment and Land Cover Type Mapping

The purpose of the habitat assessment was to identify and map habitat areas such as plant communities and other land cover types and to ascertain if existing site conditions could be suitable for special-status plant and wildlife species. Dr. Tuma characterized the existing land cover types including plant communities during the habitat assessment. He also identified and recorded plant and wildlife species, conducted a habitat assessment for special-status wildlife species such as burrowing owl (*Athene cunicularia*) [BUOW], evaluated the potential for wildlife corridors, and determined if jurisdictional waters (including wetlands) were present within the BSA.

The plant communities and other land cover types observed were identified and mapped in the field by marking their limits on a color aerial map. Descriptions of plant communities, within the BSA were based on the dominant perennial plant species. Generally, classifications of habitat types or plant communities were based on *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009), *Preliminary Descriptions of the Terrestrial Communities of California* (Holland, 1986), with modifications to better represent existing site conditions. The classifications were then checked against CDFW's *Natural Community List* (CDFW, 2022a) to determine if any of the plant communities were designated as sensitive by the CDFW.

Topography, soil characteristics, substrates, and disturbed and developed areas were also components of the habitat assessment in order to search for special-status plants and wildlife. Following the field mapping, UltraSystems GIS staff took the habitat boundaries from the aerial map and digitized the boundaries into an ArcGIS file. Once the boundaries were in the ArcGIS, the acreage of each land cover present within the BSA was then calculated.

### 3.2.2 Waters of the U.S. or State (Jurisdictional Waters/Wetlands) Assessment

This section describes the assessment methods used by the Dr. Tuma to identify potential waters of the U.S. or State (i.e., jurisdictional waters/wetlands) within the project site. The purpose of the field survey was to evaluate the initial results of the literature review and to collect additional data on existing site conditions. The Dr. Tuma investigated the project site for potential jurisdictional areas, including presence of streams or drainages with a definable bed, bank, or channel or evidence of an ordinary high water mark. areas of standing water, or depressions that had evidence of containing standing water for part of the year. Finally, Dr. Tuma assessed if there were any additional wetland indicators such as wetland hydrology, hydric soils or hydrophytic vegetation. Areas of the BSA which are developed and did not contain any exposed drainages were not surveyed.

## 4.0 RESULTS

This section describes the results of the literature review and the existing conditions within the BSA at the time the biological field surveys were conducted (environmental baseline). Photographs of the BSA that were taken during the field surveys can be found in **Appendix C**, *Site Photographs*. The reconnaissance-level biological survey was conducted by Dr. Tuma on August 24, 2022 between 2:45 and 4:00 PM. Weather conditions during the survey included clear skies with winds averaging between 0 to 4 miles per hour, and temperatures between 92- and 93-degree Fahrenheit.

## 4.1 Environmental Setting

Topography of the project site is relatively level; surfaces slope slightly in a southwesterly direction. Elevation ranges from approximately 3613 to 3624 feet amsl. The project site is located south of Poplar Street between Three Flags Avenue and Mesa Linda Street. The project site is surrounded by undeveloped lands to the north, industrial development to the west and south, and Interstate 15 to and undeveloped lands to the east (Google Earth Pro, 2022)

The climate of Hesperia is arid and characteristic of the regional Mojave Desert. In the vicinity of Hesperia, the Mojave Desert receives on average 8.5 inches per year. Summers are typically dry with occasional and scattered monsoon rain events that originate in the Gulf of California, whereas winter precipitation events are more significant and originate from the jet stream off the Pacific Ocean. The Mojave Desert exhibits a dry season extending from April through October, with an average of 0.1 inch of rain per month, and a wetter season between November through March, with an average of 0.5 inch of rain per month. Summers (June through September) are very hot, with an average high of 94 degrees Fahrenheit °F and low of 65°F. Winters (November through March) are cooler, with an average high of 57°F and low of 35°F [WRCC, 2022].

## 4.2 Soils

Based on the USDA NRCS Soil Survey, the BSA contains Hesperia loamy fine sand, 2 to 5 percent slopes (Soil Survey Staff, 2022). This soil type occurs in fan aprons, with granite-derived alluvium as the parent material. This soil map unit is not listed on the National Hydric Soils List as hydric (USDA NRCS, 2022). The A horizon of the onsite soils are comprised of 0 to 5 percent rocks varying in size from two millimeters to two centimeters in diameter (see **Appendix D** , *Soils Report*); see **Appendix A,** Figure 5, *USDA Soils*).

## 4.3 Plant Communities and Land Cover Types

### 4.3.1 Developed/Ornamental

Portions of the BSA off the project site consist of developed areas with some landscaped areas with ornamental vegetation. Developed areas structures, roads, sidewalks, paving, and other impermeable surfaces that are associated with industrial development in the area and that cannot support vegetation. Ornamental areas include bare ground, lawns, and native or non-native ornamental vegetation. Non-native oleander shrubs (*Nerium oleander*) and non-native tree species, including crepe myrtle (*Lagerstroemia* sp.) and carrotwood tree (*Cupaniopsis anacardioides*) are incorporated into landscaping on road margins, sidewalk medians, and around buildings within the BSA. Most of the species planted in the sidewalk medians and around buildings consist of a mix of drought-tolerant native and non-native plant species (see **Appendix A**, Figure 6 *Land Cover Types*).

### 4.3.2 Disturbed California Juniper Woodland

California juniper woodland community occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms in soils that are porous, rocky, coarse, sandy, or silty, and often very shallow (Sawyer et al.,

2009; CNPS, 2022b). The project site appears to have been a former California juniper woodland that has been mostly cleared from the site. Natural vegetation remaining on the project site in this community includes one large California juniper shrub and several western Joshua trees. A recent grubbing of the site, likely conducted within a month prior to the biological reconnaissance survey, removed several western Joshua trees, as evidenced by stumps in the ground and numerous branches and other western Joshua tree parts distributed on the ground surface. Less disturbed examples of California juniper woodland community are distributed in the project vicinity, including off-site portions of the BSA. Other native shrub species observed in this community in off-site locations include peach thorn (*Lycium cooperi*), Great Basin sagebrush (*Artemisia tridentata*), Nevada ephedra (*Ephedra nevadensis*), rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat (*Eriogonum fasciculatum*), and California broomsage (*Lepidospartum squamatum*). The distribution of this community within the BSA is depicted in **Appendix A**, Figure 6 *Land Cover Types*.

### 4.3.3 Disturbed

Disturbed lands consist of exposed soils that have undergone some type of disturbance such as compaction by vehicle traffic, mowing, disking, excavation or other type of alteration of the soil surface. These lands often consist of ruderal vegetation dominated by non-native, weedy species. An extensive area of disturbed lands is located in the western portion of the project site and in other, smaller areas on the project site and within the BSA on adjacent lands. The larger disturbed area is bare ground that has been used as a parking area for a long period. Other disturbed lands on the project site and within the BSA include dirt trails and unpaved road shoulders. These areas of mostly bare but include sparsely distributed weedy vegetation that includes red brome (*Bromus rubens*) and prickly Russian thistle (*Kali tragus*). The distribution of disturbed lands within the BSA is depicted in **Appendix A**, Figure 6 *Land Cover Types*.

## 4.4 Plants

### 4.4.1 Plant Species Recorded During Surveys

Six living western Joshua trees and numerous western Joshua tree stumps were observed on the project site during the field survey, However the project area is dominated by ruderal species such as red brome and prickly Russian thistle. There is evidence that the project site was formerly vegetated with western Joshua tree/juniper woodlands, however the significant disturbances that have occurred have resulted in compacted soils and dominance by ruderal species. Plant and wildlife species were recorded during the habitat assessment survey can be accessed in BRE **Appendix E,** *Plant and Wildlife Species Recorded During the Field Surveys*.

Because of development and disturbances in the area, just a small diversity native and non-native plant species was observed within the BSA. Species included non-native, ornamental species in developed areas, non-native, weedy species in disturbed areas, and remnants of California juniper woodland community. **Attachment 5**, *Species Observed,* provides a complete list of observed species.

One non-native species, red brome (*Bromus rubens*), is rated High by the California Invasive Plant Council (Cal-IPC), indicating that the species has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure [Cal-IPC, 2006].

### 4.4.2 Special-Status Plant Species with Potential to Occur in the BSA

Based on a literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a) for reported occurrences within a ten-mile radius of the project site, two listed and 11 sensitive plant species were identified by one of the following means: reported in the plant inventory, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey. Of these 13 species, seven sensitive species were determined to have only a low potential to occur and therefore are not anticipated to be impacted as a result of the project. One listed (candidate for state listing as threatened) species in the plant inventory, western Joshua tree, was observed on the project site. (see **Table 1**).

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**Table 1**
**SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR IN THE BSA**

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | |
| **Listed Endangered, Threatened, Candidate and State Rare Plants:** Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing. | | | | | | | | |
| *Yucca brevifolia (=Yucca baccata var. brevifolia)* | western Joshua tree | SCT | Lifeform: tree<br>Habitats: desert flats, slopes, sagebrush, desert shrub, pinyon-juniper, desert grasslands<br>Soils: silts, loams, and/or sands that are fine, loose, well drained and/or gravelly; alkaline or saline soils<br>Bloom Period: April to May | 1,312 - 6,561 | Yes | Yes | Yes | **Present.** There are six individual Joshua trees on the project site. |
| **Sensitive Plants:** These plants have no official status under the ESA, the CESA, and/or the NPPA; however, they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations. | | | | | | | | |
| *Asclepias nyctaginifolia* | Mojave milkweed | CRPR: 2B.1 | Lifeform: perennial herb<br>Habitats: Mojavean desert scrub and pinyon and juniper woodlands<br>Soils: sandy soils, often near washes<br>Bloom Period: May to June | 2,870 – 5,580 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Calochortus plummerae* | Plummer's mariposa-lily | CRPR: 4.2 | Lifeform: perennial bulbiferous herb<br>Habitats: chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland<br>Soils: granitic and rocky<br>Bloom Period: May to July | 330 – 5,580 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Canbya candida* | white pygmy-poppy | CRPR: 4.2 | Lifeform: annual herb<br>Habitats: Joshua tree woodland Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: granitic, gravelly, and sandy<br>Bloom Period: March to June | 1,970 – 4,790 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

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| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | |
| *Chorizanthe xanti* var. *leucotheca* | white-bracted spineflower | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: coastal scrub (on alluvial fans), Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: gravelly (sometimes) and sandy (sometimes)<br>Bloom Period: April to June | 985 – 3,935 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Eremothera boothii* ssp. *boothii* | Booth's evening-primrose | CRPR: 2B.3 | Lifeform: annual herb<br>Habitats: Joshua tree woodland and pinyon and juniper woodland<br>Soils: rocky, gravelly, and sandy<br>Bloom Period: April to September | 2,675 – 7,875 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Loeflingia squarrosa* var. *artemisiarum* | sagebrush loeflingia | CRPR: 2B.2 | Lifeform: annual herb<br>Habitats: desert dunes, Great Basin scrub, and Sonoran desert scrub<br>Soils: sandy<br>Bloom Period: April to May | 2,295 – 5,300 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Opuntia basilaris* var. *brachyclada* | short-joint beavertail | CRPR: 1B.2 | Lifeform: perennial stem<br>Habitats: chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: rocky, gravelly, and sandy<br>Bloom Period: April to June | 1,395 – 5,905 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

**Legend and Notes**

**Federal Endangered Species Act (ESA) Listing Codes:** the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened plants is published in 50 CFR § 17.12.
• **FE** = federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.

**California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes**: the CESA and NPPA are administered by CDFW. The official listing of Plants of California Declared to Be Endangered, Threatened or Rare is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.
• **SE** = state-listed as endangered: "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).

**California Rare Plant Ranks** (Formerly known as CNPS Lists): the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment. •
**CRPR 1B = California Rare Plant Rank 1B** - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
***California Native Plant Society (CNPS) Threat Ranks:*** *The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.*
• ***.1 =*** *seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)*
• ***.2****=moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)*
***Notes:***

The BSA contains approximate elevations of 3,606 to 3,620 feet amsl.
The BSA occurs on an alluvial fan in Victor Valley.
**Yes** = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.
**Low** = low potential to occur within the BSA

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Based on an analysis of the biological, physical and environmental conditions necessary for each special-status plant species identified in the plant inventory (Calflora, 2022; CNDDB, 2022a; CNPS, 2022a, b; Google Earth Pro, 2022; Jepson Flora Project, 2022; Sawyer et al., 2009; Soil Survey Staff, 2022; USEPA, 2022; USFWS, 2022a, b, c; see **Appendix A,** Figure 7, *CNDDB Known Occurrences Plant Species*), it was determined that seven of the 13 special-status species identified in the plant inventory were determined to have a low potential to occur in the BSA; four were determined to have no potential to occur or are not expected to occur. In these cases, species were determined to have no potential to occur or are not expected to occur because the project site lacks suitable habitat or is outside of a particular species geographic or elevation range. The following plant species were determined to have no potential to occur or are not expected to within the BSA for the abovementioned reasons (see **Table 2** for a description of the species status ranking notations):

- Mojave tarplant (*Deinandra mohavensis*) SE, CRPR: 1B.3
- black bog-rush (*Schoenus nigricans*) CRPR: 2B.2
- southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*) CRPR: 1B.2
- San Bernardino aster (*Symphyotrichum defoliatum*) CRPR: 1B.2

For the remaining species for which there is suitable habitat in the BSA, their potential to occur there was assessed as being 'low' for the following reasons: (1) The site has been grubbed recently and cleared and disked, perhaps repeatedly, in recent years; (2) There is evidence of vehicles driving on the site and disking the soil; this soil disturbance would decrease the likelihood of geophytes establishing onsite; (3) The operation and parking of vehicles in portions of the site may contribute to soil compaction. Many plant species cannot establish in compacted soils; (4) The project site was historically part of an alluvial fan that received surface water flow. This hydrological process no longer occurs within the BSA due to development of roads and buildings and other activities altering fluvial patterns. Thus, plant species dependent on periodic surface water flows are unlikely to establish within the BSA; and (5) The project site is adjacent to urbanized and residential developments, which thus reduces the nearby propagule sources of special-status plant species that could colonize the BSA. The following plant species, listed with their respective statuses, were determined to have low potential to occur within the BSA for the abovementioned reasons (see **Table 2** for a description of the species status ranking notations):

- Mojave milkweed (*Asclepias nyctaginifolia*) CRPR: 2B.1
- white pygmy-poppy (*Canbya candida*) CRPR: 4.2
- white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) CRPR: 1B.2
- Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*) CRPR: 2B.3
- sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) CRPR: 2B.2
- short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) CRPR: 1B.2

**Table 2**
**Special-Status Plant and Wildlife Species Ranking Notations**

| **California Endangered Species Act Listing Codes** | |
|---|---|
| **SE** | State listed as Endangered |
| **ST** | State listed as Threatened |

**Federal Endangered Species Act Listing Codes**

**FE** Federal listed as Endangered
**FT** Federal listed as Threatened

**California Department of Fish and Wildlife (CDFW) Designations**:

**SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.

**Fully protected**: fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).

**WL = watch list**: this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.

**California Rare Plant Ranks (Based on ranking system developed by the California Native Plant Society [CNPS])**

**CRPR: 1A – California Rare Plant Rank 1A - plants presumed extirpated in California and either rare or extinct elsewhere:** the plants with a CRPR of 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. All of the plants constituting CRPR 1A meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CRPR: 1B – California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere**: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CRPR: 2B – California Rare Plant Rank 2B - plants rare, threatened, or endangered in California, but more common elsewhere:** except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the ESA. All of the plants constituting CRPR 2B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CNPS Threat Ranks** –

.1 – seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 – moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
**.3** = not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

### 4.4.3 Listed Endangered, Threatened, Candidate, and State Rare Plants

One candidate for listing under CESA, western Joshua tree, was observed during the field survey.

### 4.4.4 Sensitive Plants

No sensitive plants were observed during the field survey.

## 4.5 Wildlife

### 4.5.1 Wildlife Species Recorded During the Field Surveys

Two wildlife species were directly observed during the August 24, 2022 field survey, including common raven (*Corvus corax*) and rock pigeon (*Columba livia*). Sign of California ground squirrel (*Otospermophilus beecheyi*) was observed in the BSA and project site in the form of active burrows.

### 4.5.2 Special-Status Wildlife Species with Potential to Occur in the BSA

Based on a literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a; see **Appendix A**, Figure 8, *CNDDB Known Occurrences Wildlife Species*) for reported occurrences within a ten-mile radius of the project site, there were 16 listed and 25 sensitive wildlife species identified by one of the following means: reported in the search, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey. Of those 41 total species, five listed and six sensitive wildlife species were determined to have at least a low potential to occur in the BSA (see **Table 3**). A total of 30 special-status wildlife species in the wildlife inventory were determined to have no potential to occur or are not expected to occur because the BSA lacks suitable habitat or is outside of the elevation/geographic range of these species. A total of 9 special-status wildlife species in the wildlife inventory were determined to have at least a low potential to occur in the BSA and it is anticipated that construction of the project will have less than a significant impact on the majority of those special-status wildlife species.

**Table 3**
**SPECIAL-STATUS WILDLIFE WITH A POTENTIAL TO OCCUR IN THE BSA**

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| **Listed Endangered, Threatened, and Candidate Wildlife:** Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing. | | | | | | |
| **Listed Invertebrates** | | | | | | |
| *Euphydryas editha quino (=Euphydryas editha wrighti)* | quino checkerspot butterfly | FE | Habitats: grasslands, remnant forbland, open coastal sage scrub, open chamise chaparral, open red shank chaparral, juniper woodland, and semi-desert scrub, open or sparsely vegetated rounded hilltops, ridgelines, rocky outcrops of chaparral and coastal sage scrub<br>Soils: loamy soils with moderate to high amounts of clay<br>Characteristics: adult butterflies will only deposit eggs on species they recognize as host plants | Yes | No | **Low.** The BSA contains some desert scrub habitat, however it exists in a disturbed state. In addition, the soils in the BSA do not contain a high clay faction; this species typically occurs in areas with clay-loam soils. The soils of the BSA are primarily loamy-fine-sand**.** |
| *Bombus crotchii* | Crotch's bumble bee | candidate endangered | Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats: This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA**.** |
| **Listed Reptiles** | | | | | | |
| *Gopherus agassizii* | desert tortoise | FT, ST | Habitats: Desert scrub communities, most typically creosote scrub.<br>Soil: friable soils for burrowing | Yes | No | **Low**. The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Listed Birds** | | | | | | |
| *Buteo swainsoni* | Swainson's hawk | ST | Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands<br>Characteristics: nest in juniper trees of juniper-sage flats not near riparian zones | No | Yes | **Low.** The BSA is located within the historical breeding range of the species, but breeding populations are likely extirpated from the region. The BSA supports marginal foraging and there is low potential for migrating or transient individuals to forage in the BSA. There is no potential for the species to nest within the BSA. |
| **Listed Mammals** | | | | | | |

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: Located Within Species' Distribution and/or Elevation Range (if known) | The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| *Xerospermophilus mohavensis* | Mohave ground squirrel | ST | Habitats: Desert scrub communities.<br>Soil: sandy, loamy soils for burrowing | Yes | No | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Wildlife:**<br>These animals have no official status under the ESA and/or the CESA; however, they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations | | | | | | |
| **Sensitive Invertebrates** | | | | | | |
| *Bombus crotchii* | Crotch's bumble bee | SCE | Habitats: open grassland and scrub habitats<br>Characteristics: food plants include predominantly native flowering plant species | Yes | No | **Low**. The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Reptiles** | | | | | | |
| *Phrynosoma blainvillii* | coast horned lizard | SSC | Habitats: open areas with low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral with open areas.<br>Characteristics: often found in sandy, loose soils, particularly near native ant hills | Yes | No | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Birds** | | | | | | |
| *Accipiter cooperii* | Cooper's hawk | WL | Habitats: broken woodland and habitat edges<br>Characteristics: tolerant of human activities near the nest and is seen more often nesting in urban/residential areas | Yes | No | **Low**. This species has adapted to disturbed environments and human activity. There is marginal foraging habitat and low potential for this species to forage in the BSA. Due to a lack of suitable nesting habitat (trees) there is no potential for the species to nest in the BSA. |
| *Athene cunicularia* | burrowing owl | SSC | Habitats: inhabits open grasslands and scrublands. Occupies and nests in burrows of other animals, especially those of California ground squirrels, but also those of coyotes and desert tortoises, among others.<br>Characteristics: somewhat tolerant of human disturbances | Yes | Yes | **High.** The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of |

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| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| | | | | | | human disturbances. Due to these factors, there is high potential for the species to occur in the BSA. |
| *Falco mexicanus* | prairie falcon | WL | Habitats: associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub.<br>Characteristics: Requires sheltered cliff ledges for cover and nesting | Yes | No | **Low**. The BSA does not contain suitable nesting habitat (rocky cliffs), and there is no potential for this species to nest in the BSA. There is marginal foraging habitat in the BSA, and there is low potential for this species to occur in the BSA as a forager. |
| *Lanius ludovicianus* | loggerhead shrike | SSC | Habitat: open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns<br>Characteristics: prefers areas with lookout posts, such as fence posts and wires, trees, tall shrubs | Yes | Yes | **Moderate.** The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. |
| **Sensitive Mammals** | | | | | | |
| *Antrozous pallidus* | pallid bat | SSC | Habitats: Inhabits rocky outcrops and canyons; roost sites include crevices and caves. Forages over open grasslands and scrublands near sources of water.<br>Characteristics: Has adapted roosting in buildings. | Yes | No | **Low**. The BSA does not contain suitable roosting habitat (rocky areas) needed to support populations of the species. There are no open water sources in the BSA and only marginal foraging habitat there. There is low potential for this species to occur in the BSA as a forager. |
| **Legend and Notes** | | | | | | |
| ***Federal Endangered Species Act (ESA) Listing Codes:*** the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.<br>• **FE = federally listed as endangered:** any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range**.** | | | | | | |
| ***California Endangered Species Act (CESA) Listing Codes***: the CESA is administered by CDFW. The official listing of Animals of California Declared To Be Endangered or Threatened is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.<br>•**SCE** = state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068). | | | | | | |

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| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| ***California Department of Fish and Wildlife (CDFW) Designations:*** For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering<br>• **SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.<br>• **WL = watch list:** this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species. | | | | | |
| *Notes*<br>The BSA contains approximate elevations of 3,606 to 3,620 feet amsl.<br>**Yes** =. Further evaluation is needed.<br>**No potential to occur** = the species has no potential to occur in the BSA due to a lack of factors required to support the species.<br>**Not expected to occur** = the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.<br>**Low** = low potential to occur within the BSA; the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species.<br>**Moderate** = moderate potential to occur within the BSA; the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. | | | | | | |

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Based on an analysis of the biological, physical and environmental conditions necessary for each special-status wildlife species identified in the wildlife inventory, it was determined that the majority of those species have no potential to occur or are not expected to occur in the BSA (CNDDB, 2022a, Google Earth Pro, 2022, USFWS, 2022a, b, c, d). In most cases, species were determined to have no potential to occur or are not expected to occur because the project site lacks suitable habitat or is outside of a particular species geographic or elevation range.

Some species for which there is suitable habitat in the BSA were determined to have no potential to occur or are not expected to occur for the following reasons: (1) Although not developed at a high density, the areas surrounding the project site contain some urbanized developments with paved roadways; the hazards such as traffic noise and other disturbances reduce the likelihood that certain species would establish or regularly forage in the BSA; (2) The significant disturbances that have occurred have resulted in compacted soils and dominance by ruderal species. Plant and wildlife species were recorded during the habitat assessment survey can be accessed in of **Appendix E**, *Plant and Wildlife Species Recorded During the Field Surveys*.; (3) There is evidence of vehicles driving on the site and disking the soil; this soil disturbance would decrease the likelihood of fossorial mammal species or bird or reptile species that utilize burrows establishing onsite; (4) the project site and other disturbed areas in the BSA frequently undergo grading, which would likely deter fossorial and ground-nesting birds from utilizing the project site for nesting; and (4) Street lights and traffic noise may cause certain species to avoid the BSA. Several wildlife species, listed with their respective statuses, were determined to have no potential to occur or are not expected to occur based on the abovementioned reasons. See **Appendix F** *Special-Status Species Inventory and Occurrence Potential Determination* for a discussion of these species and the description of their respective status ranking notations):

### 4.5.3 Listed Endangered, Threatened, and Candidate Wildlife

No federally listed endangered, threatened, or candidate wildlife species were observed during the field survey. Five listed wildlife species were determined to have a low potential to occur in the BSA.

### 4.5.4 Sensitive Wildlife

No sensitive wildlife species were observed during the field survey. The two sensitive wildlife species determined to have a high or moderate potential to occur are discussed below.

**High Potential to Occur**

**<u>Burrowing owl</u>**

The burrowing owl is a small, crepuscular (active at dusk and dawn), ground-inhabiting owl that is found largely throughout the southern United States. Typical BUOW habitat is open, dry, flat ground or low rolling hills with sparse vegetation and available burrows (Gallagher, 1997). BUOWs spend most of their time on the ground or on low perch sites such as fence posts and dirt mounds. They are generally found in open country, where tree or shrub canopies cover less than 30 percent of the habitat.. Typical habitat includes annual and perennial grasslands, shortgrass prairies, open agricultural areas (particularly rangelands), desert floors, and vacant lots in residential areas and

university campuses. Other habitat includes oak savannah; grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitat; sandy beaches and coastal dunes; and river bottom lands. BUOWs inhabiting urban landscaped areas may live in vacant fields/lots, pastures, airports, athletic fields, golf courses, cemeteries, city parks, road shoulders, drainage sumps, railroad beds, irrigation ditches, and road cuts. The BUOW is primarily a dry grassland species, but it persists and can even thrive in some landscapes that are highly altered by human activity, such as agricultural areas in the Central and Imperial valleys. They require large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal burrows. Vegetation cover and height that prevents the owl from observing approaching predators places the BUOW at a severe disadvantage (Center for Biological Diversity et al., 2003). They are the only small owl likely to be seen perched in the open daylight (Center for Biological Diversity et al. 2003; CWHR, 2014; Cornell Lab of Ornithology, 2022; Sibley, 2000; Shuford et al. 2008).

Suitable BUOW habitat must also support the primary prey items for BUOWs, such as insects and small mammals. BUOWs are opportunistic predators preying primarily on a broad array of arthropods (centipedes, spiders, beetles, crickets, and grasshoppers), and small rodents, but they also eat birds, amphibians, reptiles, and carrion. They may hunt from a perch, hover, hawk, run, walk, dive or hop after prey.

The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of human disturbances. Due to these factors, there is high potential for the species to occur in the BSA.

**Moderate Potential to Occur**

**Loggerhead shrike**

The loggerhead shrike (*Lanius ludovicianus*) is a CDFW Species of Special Concern, which is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status. Loggerhead shrike is also a USFWS Bird of Conservation Concern (BCC), which is a bird species listed in the USFWS' 2008 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. This species inhabits areas with scattered shrubs, trees, posts, fences, utility lines, or other

hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and western Joshua tree habitats. The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, western Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. Construction of the project would involve grading of the entire project site and the western Joshua trees and juniper would be significantly impacted as a result. Although there is suitable habitat for loggerhead shrike on the project site, the area of suitable habitat that would be destroyed by grading activities is relatively small and does not represent an expansive area of suitable habitat for this species. Therefore, the loss of this area would not have a substantial effect on the availability of loggerhead shrike habitat or population levels statewide. These impacts do not meet the threshold of significance set forth in Section 15065 of the California Environmental Quality Act (CEQA) Guidelines. Therefore, construction of the project would have a less than significant impact on loggerhead shrike (Cornell Lab of Ornithology, 2022; CWHR, 2014; Grinnell and Miller, 1944; McCaskie et al. 1979; Garrett and Dunn, 1981; Miller, 1931).

## 4.6 Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

The BSA does not contain jurisdictional Waters of the United States (Waters of the U.S.) or Waters of the State. The project site is located within the Oro Grande Wash hydrologic unit (HU; USGS HU code 180902080704) and within the Mojave River Watershed (USGS HU code 18090208), which encompasses approximately 4,500 square miles (see **Appendix A,** Figure 9, *USGS Surface Waters and Watersheds*). The Mojave River Watershed drains the northern areas of the San Bernardino Mountains (USEPA, 2022; Google Earth Pro, 2022).). There is an NWI-mapped riverine area located approximately 0.65 west of the project site (USFWS, 2022c).

Although drainages, depressions, and other topographic features that would be conducive to wetlands formation were not identified within the BSA. The runoff from the project site travels to the southwest, joining this riverine area, however the project proponent has prepared a Water Quality Management Plan (WQMP) which is designed to retain stormwater generated onsite (Allard Engineering, 2022a)

## 4.7 Critical Habitat

The BSA does not overlap with any USFWS critical habitat, and there are no critical habitats mapped by USFWS within a 5-mile radius of the project (see **Appendix A**, Figure 10, *USFWS Critical Habitat*).

## 4.8 Wildlife Corridors

The BSA does not overlap with CDFW Essential Connectivity Areas, Natural Landscape Blocks, or other wildlife corridors. The nearest CDFW-mapped wildlife corridor to the project site is Choke-point, 395 South of Ridgecrest. This linkage is located approximately 1.2 miles south of the project site (CDFW, 2022c). See Figure 11. The areas south and west adjacent to the project are developed with structures intended for commercial use. Although the project's surroundings contain undeveloped areas, the project will be constructed in an area that would not cause significant new

habitat fragmentation, and would not significantly impede the passage of wildlife, therefore resulting in less than significant impact.

Construction and operation of the proposed project would not significantly interfere with the movement of native resident or migratory fish or wildlife species or with native resident or migratory wildlife corridors. Less than significant impact would occur, and mitigation is not proposed.

California ground squirrel burrows were recorded on-site during the field survey and a small resident population occurs onsite. Ground disturbing activities such as disking, bulldozing and excavating would lead to eviction, death, or injury of individual squirrels of this common species, which would not be considered a significant impact.

The CDFW classifies both California ground squirrels as nongame animals, and as such, property owners can legally take these species (Baldwin, 2019; Quinn et al., 2018). No mitigation is required for the take of this fossorial species. The direct impacts of construction of the project to nursery sites of fossorial species would be less than significant (see **Appendix A**, Figure 11, *CDFW Wildlife Corridors*).

## 5.0 POTENTIAL IMPACTS

This section discusses potential significant effects or impacts, if any, to the environmental baseline and sensitive biological resources that could result from project construction and development. This is an important step in the CEQA process. Biological resources may be either "directly" or "indirectly" impacted by a project (defined by CEQA Guidelines § 15358). Direct and indirect impacts may be either "permanent" or "temporary" in nature. These impact categories are defined below:

- **Direct impact**: Direct impacts are those that may cause an immediate effect on the species or its habitat and occur at the same time and place. Any loss, alteration, disturbance or destruction of biological resources that could result from project-related activities is a direct impact. Examples include vegetation clearing and loss of habitat, encroaching into wetlands, diverting natural surface water flows, and the loss of individual species.
- **Indirect impact**: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Indirect impacts are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Indirect impacts can affect biological resources within the project site, adjacent to the project site, or away from the project site. Examples of indirect impacts include increased human activity, elevated noise, light, and dust levels, decreased water quality, soil compaction, erosion created by the removal of vegetation, and the introduction of invasive plants and unnatural predators. Indirect impacts may be both short term and long-term in their extent. Indirect impacts are also referred to as "edge effects".
- **Permanent impacts** (long term): All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a

building or permanent road on an area containing biological resources. Permanent impacts cannot be mitigated in-place

- **Temporary impacts (short term**): Impacts considered to have reversible impacts to biological resources can be viewed as temporary. Examples include short-term increased vehicle traffic and noise and the generation of fugitive dust during construction; or removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Temporary impacts can be reversed with the implementation of in-place mitigation measures.

This section describes the significance criteria used for determining impacts to biological resources. As mentioned in the CEQA Guidelines (§ 15064.7[a]), each public agency is encouraged to develop and publish thresholds of significance (significance criteria) that it uses to determine the significance of environmental impacts. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental impact, non-compliance with which means the impact will normally be determined to be significant by the agency and compliance with which means the impact normally will be determined to be less than significant.

Significance criteria serve as benchmarks for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. CEQA Guidelines § 15065(a) states that a project may have a "significant impact" on the environment if the project has the potential to:

- Substantially degrade the quality of the environment,
- Substantially reduce the habitat of a fish or wildlife species,
- Cause a fish or wildlife population to drop below self-sustaining levels,
- Threaten to eliminate a plant or animal community, or
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species.

The Environmental Checklist Form in Appendix G of the CEQA Statute and Guidelines (2014) was reviewed in order to determine the level of significance of project related impacts to biological resources. Under CEQA Guidelines impacts to biological resources are considered potentially "significant" if one or more of the following thresholds are exceeded with construction and operation of the project.

**Threshold 1**: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and USFWS.

**Threshold 2:** The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW and USFWS.

**Threshold 3**: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

**Threshold 4:** The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

**Threshold 5**: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

**Threshold 6**: The project would conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Significant impacts can be reduced to less than significant levels by incorporating off-setting conservation measures, including BMPs, avoidance and protection measures, and/or mitigation measures. Less than significant impacts are those in which impacts would occur, but are not expected to be substantial. Impacts to biological resources that are considered less than significant include impacts to biological resources that are reasonably widespread or exist in a degraded or disturbed state, rendering them less valuable as habitat to support wildlife diversity or special-status species, or impacts that do not meet or exceed the significance thresholds defined above. These less than significant impacts do not require conservation measures.

## 5.1 Potential Impacts to Plant Communities

The project site is situated on relatively level ground; no ephemeral, intermittent, or perennial streams or rivers were identified in the literature review or observed during the biological survey. The BSA does not support riparian habitat. There was one land cover type identified within the project site and three altogether within the BSA. The project site is covered by disturbed California juniper woodland, which is considered a sensitive plant community on the CDFW *California Natural Community List* (CDFW, 2022a). Direct impacts to this sensitive plant community are anticipated as a result of project development. Therefore, mitigation is required. **BIO-6** is discussed in **Section 6.1**.

**Significance criterion**

*Impacts would be considered significant if the project were to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS*.

In regard to the significance criterion, the project is anticipated to have an adverse effect on sensitive natural communities: **Less than Significant with Mitigation Incorporated**.

## 5.2 Potential Impacts to Special Status Plants

One candidate species for state listing as threatened was plant species (western Joshua tree) was observed on the project site. The literature review and field surveys concluded that other plant

species in the plant inventory do not have more than a low potential to occur within the BSA due to a lack of suitable habitat, soils, and/or other factors to support them; these species are not anticipated to be significantly impacted as a result of the project.

Direct or indirect impacts to special-status plant species (western Joshua tree) are anticipated as a result of construction of the project. Therefore, acquisition of a 2081 Incidental Take Permit, which is discussed in **Section 6.0**, is proposed. Additionally, mitigation is required to maintain compliance with the native desert vegetation protection provided in the City Municipal Code.

**Significance criterion**

*Impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS*.

The field survey results determined that the project site contains one listed plant species; therefore, the project will result in direct or indirect impacts to special-status plants. In regard to the significance criterion, the project is anticipated to have substantial adverse effect, either directly or through habitat modifications, to any species identified as a special-status species in federal, state, local or regional plans, policies, or regulations, or by CDFW or USFWS. With implementation of mitigation measures described below, these impacts would be reduced to a less than significant degree : **Less than Significant Impact with Mitigation Incorporated**.

## 5.3 Potential Impacts to Special-Status Wildlife

### 5.3.1 Direct Impacts

Potential direct impacts to common and special-status wildlife occupying the project site could occur from construction related mortality, injury, or harassment of individuals as a result of permanent development of the project site and from the removal and direct loss of breeding, foraging, and/or sheltering habitat. These impacts could be considered significant and potentially significant. Project development could diminish the habitat available for common and special-status wildlife species from utilizing the onsite habitat. Direct permanent impacts include all areas within the limits of grading in the project footprint.

Ground disturbing and habitat altering activities could involve significant disturbance to common and special-status ground-dwelling animals or nesting birds. Examples include grading, clearing, disking, grubbing, excavation, trenching, paving, mowing, heavy equipment compacting, driving over habitat to access the construction work sites, vegetation management activities, and use of herbicides and pesticides. Direct impacts to less mobile fossorial (burrowing) animals that are underground during most of the day or year (e.g., small mammals or lizards) or have a life stage in the soil or on plants (e.g., amphibians, nesting birds, insects) could occur from encounters with vehicles or heavy equipment as many of these animals do not run away from construction vehicles/equipment and would most likely be killed. These species could be expected to experience direct mortality, injury, harassment, and displacement from increased human activity and vehicle/equipment travel if they are present onsite within the project footprint at the time of construction. Individual losses are more

likely, especially during clearing and grubbing activities. Individuals could also be injured, disturbed, or killed from encounters with workers' or visitors' pets. Birds and bats could be injured or killed from collisions with transmission lines and wind turbines structures. Birds and bats could be injured or killed from electrocution from electric lines and structures. The loss of these animals could also affect other common and special-status wildlife that depend on them as prey. Construction related direct impacts are considered a significant impact.

**Listed Endangered, Threatened, and Candidate Wildlife:**

No listed wildlife species were observed within the BSA during the biological surveys. The results of the literature review and field surveys concluded that the following listed wildlife species have a low potential to occur within the BSA: Crotch's bumble bee, Mohave ground squirrel, and desert tortoise. All of the listed wildlife species in the wildlife inventory were determined to have no more than a low potential to occur. Therefore, no direct impacts to listed endangered, threatened, or candidate wildlife are anticipated as a result of construction of the project.

**Sensitive Wildlife**

**High Potential to Occur in the BSA**

**Burrowing Owl**

One special-status species, burrowing owl, was determined to have a high potential to occur in the BSA. There is suitable nesting, sheltering, and foraging habitat within the BSA for BUOW. The project site contains sparse shrub cover and friable soils which are preferred conditions for BUOW. Furthermore, burrowing owl are generally adaptive to disturbances and the frequent grading of the project site would not necessarily deter this species from establishing there. It is anticipated that construction of the project could have a significant impact on BUOW and therefore mitigation is proposed.

No special-status wildlife species were observed within the BSA during the biological surveys. The results of the literature review and field surveys concluded that the following sensitive wildlife species have at least a low potential to occur within the BSA: loggerhead shrike, desert kit fox, prairie falcon, Blainville's horned lizard, Swainson's hawk. and Cooper's hawk. See below for further discussion of these species [see Table 3].

### 5.3.2 Indirect Impacts

Indirect impacts could occur within areas located adjacent to the limits of construction in the project footprint. Indirect impacts are more subtle than direct ones. Impacts may either be short-term related to construction or long-term and may affect populations and habitat quality over an extended period of time, long after construction activities have been completed. Examples of indirect impacts, such as mortality, injury, or harassment of common and special-status wildlife species that could potentially occur from the project include the following:

- The permanent loss of habitat and physical features that would occur from clearing and grading could indirectly impact wildlife species through the loss of foraging, roosting, denning, and/or breeding habitat available. Habitat loss could displace species from existing territories and reduce the home range of those species and impact nearby populations of similar species. Displaced species would then have to compete for and/or find new territories and compete for food with resident species. This could result in delayed nest building, fewer nest attempts, reduced clutch size, and an overall reduction in reproductive output.
- Project construction could result in temporary increased ambient noise levels, dust, vibration, lighting and/or human intrusion in and near habitat. This could disrupt natural foraging, roosting, denning, and/or breeding behavior of wildlife species. Wildlife species stressed by these factors may disperse from habitat in the project site and project vicinity. In addition, increased noise levels could interfere with territorial and mating vocalizations, thereby interfering with wildlife reproduction.
- Project construction could increase fugitive dust, pollution, runoff, siltation, sedimentation, and erosion. This could result in degradation and alteration of habitat and soils. Consequently, the ability of onsite and adjacent plant communities to support wildlife populations may decrease.
- Nighttime construction work and use of artificial lighting could disrupt natural foraging and breeding behaviors and/or alter wildlife movement patterns and migratory routes of nocturnally active species such as mammals and snakes. Most animals would attempt to avoid moving in or near the lighting; however, some animals such as insects, migratory birds, and bats might be attracted to the lighting, increasing construction-related mortalities. Artificial lighting could also indirectly affect wildlife by increasing detection by predators. The new development could also provide an increase in artificial lighting and glare which could disrupt nocturnal wildlife behavior.
- An increase and continuation of human activities within and adjacent to the project site could lead to mortality, injury, or harassment of wildlife species by providing food in the form of trash and litter or water which attracts predators such as the common raven (*Corvus corax*), northern raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and coyote.

**Listed Endangered, Threatened, and Candidate Wildlife:**

No indirect impacts to endangered, threatened, or candidate wildlife species are anticipated as a result of construction of the project.

**Sensitive Wildlife**

There are potential indirect impacts of construction of the project on foraging and/or nesting behavior of sensitive wildlife species that have a moderate or high potential to occur throughout the BSA such as burrowing owl and loggerhead shrike. Both of these species would lose foraging and potential nesting habitat as a result of construction of the project. Therefore, mitigation is proposed and would reduce impacts from this loss of foraging and nesting habitat of these sensitive species.

### 5.3.3 Mitigation Measures

**Listed Endangered, Threatened, and Candidate Wildlife:**

Listed wildlife are not anticipated to be impacted as a result of the project; therefore, no mitigation is proposed.

**Sensitive Wildlife**

Sensitive wildlife could potentially be impacted by construction and project development, and mitigation is recommended. Implementing the recommended mitigation measures **BIO-2** through **BIO-5** (see **Section 6.0,** *Mitigation Measures*) will help to minimize or avoid impacts to sensitive wildlife that could potentially occur within the BSA.

Several mitigation measures will be implemented in order to minimize and avoid impacts to loggerhead shrike, burrowing owl, and other special-status wildlife species that could potentially occur on the project site. Mitigation measure **BIO-2** provides for the instatement of focused burrowing owl surveys with protection measures. Mitigation measure **BIO-3** provides for a pre-construction general wildlife survey, and **BIO-4** provides for implementation of a loggerhead shrike survey and protection measures. Implementation of mitigation measure **BIO-5** provides for the instatement of pre-construction breeding bird survey. All recommended surveys shall be conducted by a qualified biologist. With the implementation of mitigation measures **BIO-2** through **BIO-5**, the impacts of construction and project operations to sensitive wildlife would be less than significant.

### 5.3.4 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

**Listed Endangered, Threatened, and Candidate Wildlife:**

The project is not anticipated to have direct or indirect impacts to listed wildlife. In regard to the significance criterion, the project is anticipated to have no substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS: **Less than Significant Impact**.

**Sensitive Wildlife:**

Project construction is not expected to cause impacts to bird species that only forage at the site or occur as transient visitors. Implementing the recommended mitigation measures **BIO-2** through **BIO-5**, which are described in the Mitigation Measures section (**Section 6.0**), will help to minimize or avoid significant impacts to sensitive wildlife to less than significant levels: **Less than Significant Impact with Mitigation Incorporated**.

## 5.4 Potential Impacts to Breeding Birds

The BSA supports shrub vegetation, and other physical features that could potentially provide foraging, nesting, and cover habitat to support an assortment of bird species (year-round residents, seasonal residents, and migrants). A majority of the birds observed during the field surveys and those birds that could potentially breed within the BSA are protected by the MBTA and Fish and Game Code § 3503, § 3503.5, and § 3513. The statutes make it unlawful to take native breeding birds, and their nests, eggs, and young.

### 5.4.1 Direct Impacts

Activities which are most likely to result in take of migratory birds during the breeding bird season when eggs or young are likely to be present include, but are not limited to, clearing or grubbing of bird nesting habitat; structure demolition; or vegetation trimming or clearing. The project has a low potential to directly take individual breeding birds, their nests, young, or eggs; therefore, mitigation is required.

### 5.4.2 Indirect Impacts

Indirect impacts to breeding birds could occur from increased noise, vibration, lighting and dust during construction, which could adversely affect the breeding behavior of some birds and lead to the loss (take) of eggs and chicks, or nest abandonment. The project has a low potential to indirectly affect individual breeding birds, their nests, young, or eggs; therefore, mitigation is required.

### 5.4.3 Mitigation Measures

Implementing the recommended mitigation measure**BIO-5**, which is described in the **Section 6.0** , will help to minimize or avoid potential impacts to breeding birds, their nests, young, or eggs. In particular, mitigation measure **BIO-5** provides for a pre-construction breeding bird survey in which biologists will take steps to protect any breeding bird and its nest observed prior to construction. Implementation of mitigation measure **BIO-5** will minimize the risk of nest loss during excavation activities.

### 5.4.4 Impact Determination

Project construction is not expected to cause impacts to bird species that only forage at the site or occur as transient visitors. Direct and indirect impacts to breeding birds, their nests, young, or eggs could potentially occur as a result of construction of the project. Given the relatively small size of the project footprint; the minor reduction of suitable nesting habitat; the nature of the disturbance; and the availability of other habitat within the immediate project vicinity, the potential impacts to breeding birds, their nests, young, or eggs would likely be minor. Implementing the recommended mitigation measures **BIO-5**, which is described in **Section 6.0** below, will help to avoid, eliminate or reduce significant impacts to breeding birds, their nests, young, or eggs to less than significant levels; therefore, it is anticipated that the project may impact breeding birds, their nests, young, or eggs, but the impacts will not be significant: **Less than Significant Impact with Mitigation Incorporated**.

## 5.5 Potential Impacts to Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

The literature review and reconnaissance-level biological survey determined that there are no waters of the U.S. or State (i.e., jurisdictional waters/wetlands; see **Appendix A**, Figure 9, *USGS Surface Waters and Watersheds*; Figure 12, *National Wetlands Inventory*).

### 5.5.1 Direct or Indirect Impacts

No direct or indirect impacts to Waters of the U.S. or State are anticipated as a result of construction of the project.

### 5.5.2 Mitigation Measures

Waters of the U.S. or State are not anticipated to be impacted by construction of the project; therefore, no mitigation is proposed.

### 5.5.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

The project is not anticipated to have direct or indirect impacts to Waters of the U.S. or State. **No Impact**.

## 5.6 Potential Impacts to Critical Habitat

There are no mapped areas of critical habitat within a 5-mile radius of the project (USFWS, 2022d). .

### 5.6.1 Direct and Indirect Impacts

There are no adverse impacts to critical habitat anticipated as a result of the project.

### 5.6.2 Mitigation Measures

No mitigation measures are required for impacts to critical habitat, therefore no mitigation is proposed..

### 5.6.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

There will be no impacts to critical habitat because there are no mapped areas of critical habitat within a 5-mile radius of the project. **No Impact**.

## 5.7 Potential Impacts to Wildlife Corridors or Native Wildlife Nursery Sites

The literature review and field surveys determined that the project site does not contain wildlife corridors.

By contrast, direct impacts are anticipated to native wildlife nursery sites of fossorial species. UltraSystems biologist Dr. Tuma observed California ground squirrels during the field survey. These sightings of fossorial mammals and their burrows indicate that there may be resident populations of these species onsite. Thus, it is likely that fossorial mammal species give birth and raise young within the burrow complexes located onsite. Ground disturbing activities such as disking, bulldozing and excavating would lead to death and injury of fossorial species which do not typically evacuate their burrows during this type of disturbance.

### 5.7.1 Direct and Indirect Impacts

No direct or indirect impacts to wildlife corridors are anticipated as a result of construction of the project.

Although there would likely be direct impacts to nursery sites of fossorial species as a result of construction of the project, it is not anticipated that these impacts will be significant. The CDFG classifies California ground squirrels as nongame animals, and as such, property owners can legally take these species (Baldwin, 2019; Quinn et al., 2018). No mitigation is required for the take of this fossorial species. The direct impacts of construction of the project to nursery sites of fossorial species would be less than significant.

### 5.7.2 Mitigation Measures

Wildlife corridors are not anticipated to be impacted as a result of the project. Native wildlife nursery sites are anticipated to be impacted to a less than significant degree; therefore, no mitigation measures are required.

### 5.7.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

The literature review and field surveys determined that the project site does not contain wildlife corridors. While the project could potentially contain native wildlife nursery sites; impact as a result of the project is anticipated to be less than significant.. In addition, the project site does not support resident or migratory fish species. In regard to the significance criterion, the project is not anticipated

to interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors: **Less Than Significant Impact**.

## 5.8 Potential Impacts to Local Policies or Ordinances

The project site contains approximately six living western Joshua trees, a species that qualifies for protection under Article II, Section 16.24.150, which also provides that "*all plants protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits*" (City of Hesperia; 1997). A qualified City-approved biologist or arborist should be retained to conduct any future relocation/transplanting activities and should follow the protocol of the City's Municipal Code. As provided in Section 16.24.120 of City Municipal Code, "any person who willfully removes, or harvests or transplants a living desert native plant shall first obtain approval from the county to do so in accordance with the procedures set forth in Sections 16.24.040 or 16.24.110 et seq." (City of Hesperia, 1997). The City addresses all western Joshua trees as one of the protected vegetation types.

### 5.8.1 Direct and Indirect Impacts

It is not anticipated that there will be direct or indirect impacts to biological resources within the BSA that are not already more strongly protected by state and federal regulations.

### 5.8.2 Mitigation Measures

To mitigate for the impacts to the protected native desert vegetation on the project site, the project proponent will implement mitigation measure **BIO-7** which proposes that a native desert vegetation survey is conducted to aid in the creation of a Preservation Plan as required by the City. After implementation of **BIO-7**, which is further discussed below, impacts to protected native desert vegetation would be reduced to a less than significant degree.

### 5.8.3 Impact Determination

**Significance criterion**: *Impacts would be considered significant if the project were to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

The literature review determined that construction of the project does conflict with local policies or ordinances that protect biological resources. Implementation of mitigation measures will reduce these impacts to a less than significant degree: **Less than Significant Impact with Mitigation Incorporated.**

## 5.9 Potential Impacts to Habitat Conservation Plans

Development of the project would not conflict with an HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

### 5.9.1 Direct and Indirect Impacts

There are no anticipated conflicts with local habitat conservation plans as a result of construction of the project.

### 5.9.2 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.*

In regard to the significance criterion, the project will not conflict with the provisions of adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan: **No Impact.**

## 6.0 MITIGATION MEASURES

CEQA states that "mitigation measures are not required for effects which are not found to be significant" [§ 15126.4(a)(3)]. Therefore, no mitigation measures are proposed for impacts to biological resources that are less than significant. However; if significant impacts to biological resources are identified, then possible mitigation measures are recommended to minimize or avoid the level of the impacts to less than significant levels. There are several forms of mitigation. Under CEQA (§ 15370), "mitigation" includes all of the following:

- "Avoiding" the impact altogether by not taking a certain action or parts of an action.
- "Minimizing" impacts by limiting the degree or magnitude of the action and its implementation.
- "Rectifying" the impact by repairing, rehabilitating, or restoring the impacted environment.
- "Reducing" or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- "Compensating" for the impact by replacing or providing substitute resources or environments.

The following mitigation measures would help to minimize or avoid direct or indirect impacts to biological resources to less than significant levels and to comply with all appropriate environmental laws, ordinances, policies, regulations, and management plans.

## 6.1 BIO 1: 2081 Incidental Take Permit

Western Joshua trees are a state candidate for listing species under CESA and will require a 2081 Incidental Take Permit (ITP) with compensatory mitigation for impacts, in addition to the surveys that are discussed in Section e). The exceptions and permitting process under the California Desert Native Plants Act and the separate exceptions under the Native Plant Protection Act will not apply to

western Joshua tree in any manner. For projects where "take" is incidental to carrying out an otherwise lawful activity, an ITP may be obtained from CDFW.

## 6.2 BIO 2: Focused Burrowing Owl Surveys

Although BUOW was not detected on site during the general wildlife survey, the BSA contains suitable habitat to potentially support BUOW in the future. A qualified biologist would conduct a focused BUOW survey in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW, 2012).

Following the completion of the survey, the biologist would prepare a letter report summarizing the results of the survey. The report would be submitted to the City prior to initiating any ground disturbance activities.

If no BUOWs or signs of BUOW are observed during the survey and concurrence is received from Environmental Management Division of the San Bernardino County Department of Public Works (County EMD) and CDFW, project activities may begin and no further mitigation would be required.

If BUOW or signs of BUOW are observed during the survey, the site would be considered occupied. The biologist would implement the following protection measures and contact the City, EMD, and CDFW to assist in the development of avoidance, minimization, and mitigation measures, prior to commencing project activities. The list of potential measures to avoid and minimize impacts to BUOWs described in the above section would be implemented.

**BUOW Protection Measures**

If BUOWs or signs of BUOW are observed during the survey, then the site would be considered occupied and the biologist shall contact the City, EMD, and CDFW to assist in the development of avoidance, minimization, and mitigation measures discussed below, prior to commencing project activities.). If no BUOW or signs of BUOW are observed during the focused surveys, the components of this measure (discussed below) would not be applicable.

**Planning BUOW Protection**

Grading, construction, and other project activities on all grassland habitat will be delayed until the qualified biologist has implemented burrow exclusion and closure. No ground-disturbing activities within 50 meters (165 feet) of an active BUOW burrow will be permitted until burrow exclusion and closure have been implemented. No destruction of foraging habitat will be permitted until burrow exclusion and closure have been implemented.

**Pre-Construction BUOW Protection**

Prior to the initiation of grading and construction activities, the biologist shall implement passive relocation of an active BUOW burrow by installing a one-way door and then permanently excluding the BUOW from returning once it is confirmed that no BUOW individuals remain in the burrow. A biological monitor will visit the site daily to verify that the burrow is empty by monitoring and scoping the burrow.

**Construction BUOW Protection**

A biological monitor will be onsite to monitor any BUOW or signs of BUOW. If any BUOW are observed then the biologist will consult with the County EMD and CDFW to determine the appropriate measures.

## 6.3 BIO-3: Pre-Construction General Wildlife Survey

Special-status wildlife species that have no designated status under the ESA, the CESA, and/or the NPPA, but are designated as sensitive or locally important by federal agencies, state agencies, local agencies such as the RCA, and nonprofit resource organizations such as the CNPS are referred to as "sensitive" in this BRE. The following measures will be implemented to minimize impacts to these species which include but are not limited to: Blainville's horned lizard, prairie falcon, and desert kit fox. The measures below will help to reduce direct and indirect impacts caused by construction on various sensitive species to less than significant levels.

- A qualified biologist will conduct a pre-construction general wildlife survey for sensitive wildlife and potential nesting sites such as open ground, shrubs, and burrows within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

- If sensitive species and/or active nesting sites are observed during the pre-construction survey or they are observed and will not be impacted, project activities may begin and no further mitigation will be required.

- If any sensitive wildlife species are identified within the project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency to determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency. zone.

- Sensitive wildlife species and/or potential nesting sites will not be disturbed, captured, handled or moved

## 6.4 BIO-4: Loggerhead Shrike Survey and Protection Measures

The following measures are proposed in order to minimize impacts to loggerhead shrike, for which there is suitable habitat in the BSA.

- If activities occur during the breeding/nesting period, a wildlife survey will be completed by a qualified biologist to identify potential loggerhead shrike activity in the area of the project activities.

- Additional species surveys to determine presence/absence of birds prior to disturbances, from May 1 until the work start date, if the work start date is prior to August 31. Surveys are to occur weekly in May, every other week in June, and once per month in July and August (assuming no loggerhead shrike are observed).

- Incidental occurrences of other sensitive avian species such as Swainson's hawk. and Cooper's hawk should also be recorded during the survey.

## 6.5 BIO 5: Pre-Construction Breeding Bird Survey

To maintain compliance with the MBTA and Fish and Game Code, and to avoid impacts or take of migratory non-game breeding birds, their nests, young, and eggs, the following measures will be implemented. The measures below will help to reduce direct and indirect impacts caused by construction on migratory non-game breeding birds to less than significant levels.

- Project activities that will remove or disturb potential nest sites, such as open ground, trees, shrubs, grasses, or burrows, during the breeding season would be a potential significant impact if migratory non-game breeding birds are present. Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season to avoid potential direct impacts on migratory non-game breeding birds protected by the MBTA and Fish and Game Code. The breeding bird nesting season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions. Removing all physical features that could potentially serve as nest sites will also help to prevent birds from nesting within the project site during the breeding season and during construction activities.

- If project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds and active nests or potential nesting sites within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

- If no breeding birds or active nests are observed during the pre-construction survey or they are observed and will not be impacted, project activities may begin and no further mitigation will be required.

- If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted, the site will be mapped on engineering drawings and a no activity buffer zone will be marked (fencing, stakes, flagging, orange snow fencing, etc.) a minimum of 100 feet in all directions or 500 feet in all directions for listed bird species and all raptors. The biologist will determine the appropriate buffer size based on the type of activities planned near the nest and the type of bird that created the nest. Some bird species are more tolerant than others of noise and activities occurring near their nest. This no-activity buffer zone will not be disturbed until a qualified biologist has determined that the nest is

inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by project activities. Periodic monitoring by a biologist will be performed to determine when nesting is complete. Once the nesting cycle has finished, project activities may begin within the buffer zone.

- If listed bird species are observed within the project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency to determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency.

- Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist.

## 6.6 BIO-6: Mitigation for Impacts to Western Joshua Tree and California Juniper Woodlands

**Avoidance and Minimization Measures**

The entirety of the project area, which is approximately 19 acres of California juniper woodland, is currently planned for development. The California juniper woodland is a sensitive natural community (CDFW, 2022a). As such, impacts as a result of the project, shall be mitigated so that all impacts to these habitats are mitigated on acreage and tree basis.

Proposed project activities including the construction phase, operations, and maintenance phase shall be designed to avoid California juniper woodland and western Joshua tree habitat to the maximum extent practicable. If the California juniper or associated western Joshua trees are removed as a result of project activities, then compensatory mitigation is required as follows.

The preferred compensatory mitigation is through an in-lieu fee to a qualified mitigation bank within the service area of the site, ideally within the same watershed. The project proponent shall coordinate with CDFW to identify appropriate mitigation banks and number of required mitigation credits to fully offset site impacts at a minimum of a 2:1 replacement to impact ratio.

However, applicant-responsible compensatory mitigation is acceptable through preparation of a Habitat Preservation and Protection Plan, to be approved by CDFW prior to project approval.

**Habitat Preservation and Protection Plan**

For applicant-responsible compensatory mitigation, then the project proponent shall enter into a binding legal agreement regarding the preservation of offsite lands describing the terms of the acquisition, enhancement, and management of those lands. Fee title to acquired habitat lands, or a conservation easement over these lands, shall be transferred to CDFW or to an entity approved by

CDFW, along with financial assurances (funds) for preservation, rehabilitation, and enhancement of the land, and an endowment for permanent management of the lands.

A formal Habitat Preservation and Protection Plan to detail methods for site preservation, restoration, monitoring, and protection shall be written. The plan will include permanent photo documentation points from the pre-restoration stage to the conclusion of the monitoring requirement. Photo documentation shall occur on a quarterly and annual basis or as required by CDFW. The number of Joshua and juniper trees existing onsite, transplanted, installed as container stock, will be recorded and qualitatively assessed quarterly and quantitatively assessed on an annual basis until performance criteria and/or contingency criteria are successfully attained. A final monitoring report will be provided at the conclusion of the post-construction restoration phase. The project proponent shall provide the final monitoring report to CDFW for approval of completion for the project.

## 6.7 BIO 7: Native Desert Vegetation Survey and Protected Plant Preservation Plan

A Preservation Plan will be prepared and submitted to the City, which is required by City Municipal Code. A native desert vegetation survey must be conducted to produce findings that will guide the formation of this plan. The survey objective is to evaluate the health and general condition of the western Joshua trees and creosote bush present on the project site. A project-specific Plan will provide further guidance regarding the transplant and/or preservation of the western Joshua trees and protection for creosote rings "*10 feet or greater in diameter*" as per Section 16.24.150 of City Municipal Code (City of Hesperia, 1997). Transplant suitability of the western Joshua trees will be determined by the results of the survey. This survey shall be conducted by a qualified City-approved biologist or arborist. The plan will incorporate survey data, identify and outline preconstruction survey methods for the native desert vegetation on the project site, describes preconstruction and construction-phase biological monitoring and transplant methods that are applicable, or outlines any identified CDFW permit and Memorandum of Understanding requirements for active relocation, if either are necessary. The Plan should be referred to for a detailing of protective actions regarding the western Joshua trees on the project site.

# 7.0 PERMITS AND APPROVALS

Listed (candidate for state listing as threatened; CNDDB 2022b) western Joshua tree was observed during the biological survey. Therefore it has been determined that the project would require a 2081 Incidental Take Permit, which can be obtained from CDFW.

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# BIOLOGICAL RESOURCES EVALUATION FOR THE CARGO SOLUTIONS TRUCK WAREHOUSE PROJECT

## HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA



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**November 9, 2022**

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## 1.0 INTRODUCTION

UltraSystems Environmental, Inc. (UltraSystems) has been retained by Cargo Solutions to prepare this biological resources evaluation (BRE) report. This BRE documents the methods and results of the literature review and field survey of the biological resources potentially associated with the project site and of areas within a 500-foot zone around the project site; collectively, this area is referred to as the Biological Study Area (BSA). This BRE provides a summary of existing conditions, an assessment of the potential presence of sensitive biological resources, an analysis of the potential impacts to those resources from project construction and development and a discussion of recommended mitigation measures to minimize or avoid potential impacts to biological resources. It summarizes the biological resources present within the BSA at the time of the field survey including plant communities, land cover types, the potential occurrence of special-status plant and wildlife species, critical habitat, and wildlife corridors.

As mentioned above, a literature review and reconnaissance-level field survey were conducted to evaluate the potential impacts of construction of the project on the existing biological resources within the BSA. This BRE presents the results of the analysis in the following sections: Regulatory Context, Methods, Results, Potential Impacts, and Mitigation Measures.

Plant and wildlife species listed under the federal Endangered Species Act (ESA) or under the California Endangered Species Act (CESA) as endangered, threatened or as a candidate for listing will be referred to collectively as "listed species" in this document. Plant and wildlife species not listed under ESA or CESA but still protected by federal agencies or state agencies, and/or conservation organizations such as the California Native Plant Society (CNPS), are collectively referred to as "sensitive species" in this document. The term "special-status species" will be used when collectively referring to both listed and sensitive species. Some of these plant and wildlife species are afforded special legal or management protection because they are declining in population size, and/orhave a limited geographic range, and/or are constrained to fragmented, reduced-quality habitat.

This report also identifies and analyzes the potential biological significance of site construction and development in view of federal, state, and local laws, regulations, policies, orders, ordinances and/or management plans. Finally, it recommends, as appropriate, mitigation measures (best management practices [BMPs], avoidance and protection measures, and mitigation measures) to minimize or avoid potential environmental impacts to less than significant levels.

The study of biological resources associated with the BSA was conducted to comply with the California Environmental Quality Act (CEQA) requirements for a biological evaluation of projects that would potentially impact natural resources. CEQA is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This report is intended to satisfy the biological resource needs of the CEQA process. This report will also assist federal and state resource agencies in their review of the project and support permits required for the project from these resource agencies.

## 1.1 Project Location

The project site is located in southwestern San Bernardino County in the City of Hesperia (City), and lies within the United States Geological Survey (USGS) 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle (see **Appendix A**, Figure 1, *Regional Location;* Figure 2, *Project Vicinity*) The project site is directly south of Poplar Street between Three Flags Avenue and Mesa Linda Street (see **Appendix A**, Figure 3, *Project Boundary and Biological Study Area* [*BSA*]). The BSA's elevation ranges from approximately 3,606 to 3,620 feet above mean sea level (amsl) [see **Appendix A**, Figure 4, *Topographic Map*; Google Earth Pro, 2022].

The project site is located in the jurisdiction of the following resource agency field offices:

- **United States Fish and Wildlife Service (USFWS)**
  **Palm Springs Fish and Wildlife Office**
  777 E. Tahquitz Canyon Way, Suite 208
  Palm Springs, CA 92262
  Phone: (760) 322-2070

- **California Department of Fish and Wildlife (CDFW)**
  **Inland Desert Region 6**
  3602 Inland Empire Boulevard, Suite C-220
  Ontario, CA 91764
  Phone: (909) 484-0167

- **United States Army Corps of Engineers (USACE)**
  **Los Angeles District**
  915 Wilshire Boulevard, Suite 980
  Los Angeles, CA 90017
  Phone: (213) 452-3908/3333

- **San Bernardino County**
  **Department of Public Works**
  **Environmental Management Division**
  825 E. Third Street
  San Bernardino, CA 92415-0835
  Phone:(909)-387-8109

- **Regional Water Quality Control Board (RWQCB**
  **Lahontan Region (Region 6)**
  15095 Amargosa Road, Building 2, Suite 210,
  Victorville, CA 92394
  Phone: (760) 241-6583

- **City of Hesperia Planning Department**
  9700 Seventh Ave
  Hesperia, CA 92345
  Phone: (760) 947-1224

## 1.2 Project Description

The City of Hesperia (City) is processing a request to implement a series of discretionary actions that would ultimately allow for the development of a truck warehouse development (project) at the southeast intersection of Poplar Street and Three Flags Avenue in the City of Hesperia in San Bernardino County, California (APNs: 3064-591-17, -18, -12, and -13 and 3064-631-01). The project proposes development of three buildings (two warehouse and office buildings, and one drive-thru truck wash building) and a surface parking lot on an approximately 20.32-acre site. The City is the Lead Agency for the CEQA purposes.

The entire 20.32-acre project site is currently undeveloped land. The project site is located in a semi-rural, lightly developed portion of the city with undeveloped land to the north; industrial, commercial, and undeveloped land uses to the south; the Interstate 15 (I-15) freeway to the east; and commercial and undeveloped land uses to the west (Google Earth Pro, 2022)

The project would consist of: (1) construction of two warehouse and office buildings; (2) construction of one drive-thru truck wash building; (3) surface parking lot; (4) utilities improvements; and (5) landscaping. (see **Appendix B**, *Site Plans*).

# 2.0 REGULATORY CONTEXT

## 2.1 Federal Statutes, Regulations, and Executive Orders

### 2.1.1 Section 401 Clean Water Act (CWA)

Although the Clean Water Act (CWA) is a federal law, Section 401 of that law recognizes that states have the primary authority and responsibility for setting surface- and groundwater water quality standards.

Section 401 is implemented through a Water Quality Certification (WQC) process. In the State of California, the State Water Quality Resources Board (SWRCB) has given the responsibility for issuing Section 401 WQCs to its nine Regional Water Quality Control Boards (RWQCBs), unless a discharge of dredged or fill material is proposed within more than one region. In the event that a project proposes discharges of dredged or fill material in more than one region, responsibility for issuance of a Section 401 WQC will lie either with the SWRCB, or, upon agreement of the RWQCBs for the affected regions, with the RWQCB chosen in the discretion of the RWQCBs. Cal. Water Code, § 13160; Cal. Code Regs., tit. 23, § 3838. Certification must be based on a finding that the proposed discharge will comply with water quality standards, which include numeric and narrative water quality objectives applicable to identified surface waters in the Water Quality Control Plan for the region (Basin Plan) in which a discharge of fill is proposed.

### 2.1.2 Section 404 Clean Water Act

Section 404 CWA requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), for the discharge of dredged or fill material into all waters of the United States, including wetlands. Authorizations are conducted through the issuance of Nationwide (or

General) Permits, for activities that would cause only minimal permanent individual (between 0.1 and 0.5 acre) and cumulative impacts; through Individual (or Standard) Permits for activities that are likely to have more than a minimal permanent (greater than 0.5 acre) or cumulative impact on aquatic resources; and through Letters of Permission (LOPs) which are a type of individual permit issued through an abbreviated process that includes coordination with federal and state fish and wildlife agencies and a public interest evaluation, but without the 30-day permit notice period that is required for Individual Permits. The Los Angeles District of the USACE would provide review and permitting services for this project.

Wetlands and other waters that do not meet the definition of waters of the U.S. are not covered by the CWA; however, they are regulated by the State of California through the Porter-Cologne Water Quality Control Act (Porter-Cologne) and SWRCB Resolution No. 2019-0015 for California (SWRCB, 2019).

### 2.1.3 Endangered Species Act (ESA)

The federal Endangered Species Act of 1973 (Title 16, United States Code [U.S.C.] Sections (§§) 1531-1543) (ESA), as amended, designates and provides for protection of listed threatened and endangered plant and animal species, and their critical habitat. The USFWS, in the Department of the Interior, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), in the Department of Commerce, share responsibility for administration of the ESA. These responsibilities include listing and delisting species, designating critical habitat, and formulating recovery plans. The ESA is divided into 18 sections that work together to prevent species from going extinct by helping to stabilize populations, reduce the threats to their survival, and to help species recover to the point that they no longer require federal protection.

**Section 4 (Determination of Endangered Species and Threatened Species):**

Section 4 of the ESA addresses listing of species in need of the ESA's protection. Species are listed as either endangered or threatened under Section 4 of the ESA. A federally-endangered species is one that is facing extinction throughout all or a significant portion of its range. A federally-threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Under Section 4, actions needed to recover those species and conserve their habitats are also identified, along with a process for reaching recovery goals that allow for a species' removal from federal protection. The presence on a project site of any fish or wildlife species that is federally listed as endangered or threatened generally imposes constraints on development to the extent that development is likely to result in a prohibited "take" of the species or substantial adverse modification of its habitat as described below.

**Section 7 (Interagency Cooperation):**

Two sections of the ESA (§§ 7 and 10) authorize incidental take. Section 7 of the ESA regulates take associated with federal projects or projects that require a federal permit. It also requires federal agencies to use their authority to carry out conservation programs to benefit endangered and threatened species. Under § 7, federal agencies are required to consult with the USFWS or the NMFS to ensure that any action they carry out, including those they fund or authorize (such as through a

permit) will not likely jeopardize the continued existence of listed species, or result in the destruction or adverse modification of proposed or designated critical habitat of such species. Under § 7, consultations can either be informal or formal.

**Section 9 (Prohibited Acts):**

Once a species is listed, Section 9 of the ESA makes it unlawful for any person, including private and public entities, to "take species listed as endangered or without a permit issued pursuant to Section 10 or an incidental take statement issued pursuant to Section 7. Section 9 defines "take" as "*to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct*." The term "harm" is defined as "*an act which actually kills or injures wildlife. Such an act may include substantial habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering*."

Take prohibitions of Section 9 of the ESA apply to listed wildlife and fish species, but not to plants. Endangered plants are not protected from take, although it is unlawful to remove, possess, or maliciously damage or destroy them on federal lands. Removing or damaging listed plants on state and private lands in knowing violation of state law, or in the course of violating a state criminal trespass law, also is illegal under the ESA.

**Section 10 (Incidental Take Permits and Habitat Conservation Plans):**

An incidental take permit pursuant to Section 10(a)(1)(B) is required when non-Federal, otherwise lawful activities, including lawful project development, will result in take of threatened or endangered wildlife. Under this provision, the USFWS and/or NMFS may, where appropriate, authorize the taking of federally listed wildlife or fish if such taking occurs incidentally during otherwise legal activities. Section 10(a)(2)(B) requires an application for an incidental take permit to include a HCP. The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate avoidance, minimization and mitigation measures to address the effects of the authorized incidental take. Section 10 provides a clear regulatory mechanism to permit the incidental take of federally listed fish and wildlife species by private interests and non-Federal governmental agencies.

### 2.1.4 Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, U.S.C. Sections 703 - 712), as amended, implements various treaties and conventions between the United States (U.S.) and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. Take is defined in regulations implementing the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. The USFWS' Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally listed threatened or

endangered migratory birds, bald eagles, and golden eagles. Take under the MBTA does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA

## 2.2 State Statutes and Regulations

### 2.2.1 California Environmental Quality Act

The California Environmental Quality Act of 1970 (Title 14, California Code of Regulations, §§ 15002-15387) (CEQA) is California's broadest environmental law (California Legislative Information, 2022a). CEQA applies to certain activities of state and local public agencies. It requires lead agencies (i.e., those making land use decisions) as well as any other responsible state agencies issuing discretionary permits, to evaluate and disclose the significance of all potential environmental impacts of a project. The lead agency is also responsible for identifying, negotiating and implementing feasible impacts avoidance, minimization, or mitigation measures that reduce and compensate for significant environmental impacts with the goal of reducing those impacts to less than significant levels. Lead agencies determine significance on a project-by-project basis because they must consider all potential risk, including cumulative impacts, within a local and regional context, as well as evaluate unique factors particular to the project area when exercising their discretion to approve or disapprove a project.

The CEQA Guidelines specify that a project has a significant impact on the environment if, among other things, it has the potential to "substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or an animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species…." [CEQA Guidelines § 15065(a)(1)] (AEP, 2022).

The purpose of CEQA is to:

- Disclose to the public the significant environmental impacts of a proposed discretionary project, through the preparation of an Initial Study, Negative Declaration, or Environmental Impact Report.
- Prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring.
- Disclose to the public the agency decision making process utilized to approve discretionary projects through findings and statements of overriding consideration.
- Enhance public participation in the environmental review process through scoping meetings, public notice, public review, hearings, and the judicial process.
- Improve interagency coordination through early consultations, scoping meetings, notices of preparation, and State Clearinghouse review.

### 2.2.2 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) (California Fish and Game Code §§ 2050-2089) was enacted in 1984 to parallel the federal ESA and allows the Fish and Game Commission to designate

species, including plants, as threatened or endangered (California Legislative Information, 2022a). The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Unlike the ESA, the CESA does not include listing provisions for invertebrate species.

CESA makes it illegal to import, export, take, possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by CDFW. Section 2080 of the California Fish and Game Code prohibits take of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in § 86 of the California Fish and Game Code as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill*." (CDFW, 2021)

Under CESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for incidental take are that the take is minimized and fully mitigated, adequate funding is ensured for this mitigation, and that the activity will not jeopardize the continued existence of the species. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species populations and their essential habitats.

### 2.2.3 Fully Protected Species - California Fish and Game Code § 3511, § 4700, § 5050 and § 5515

The classification of fully protected was the State of California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for birds (§ 3511), mammals (§ 4700), amphibians and reptiles (§ 5050), and fish (§ 5515). Fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for scientific research and relocation of the species for certain purposes. "Take" is defined in § 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under § 2835 of the Fish and Game Code, CDFW may only issue permits allowing incidental take of fully protected species if a NCCP is prepared that provides for the protection of that species in accordance with the requirements and standards applicable to NCCPs (Fish and Game Code §§ 2800-2835). Alternatively, avoidance measures sufficient to prevent incidental take of fully protected species must be incorporated into project design, and construction plans and operations. The MSHCP is an HCP and a NCCP, and includes incidental take authorization pursuant to Fish and Game Code § 2085, but the MSHCP does not authorize take of fully protected species.

### 2.2.4 Bird Nests and Eggs - California Fish and Game Code § 3503

California Fish and Game Code § 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take. Avoidance measures sufficient to

prevent incidental take of bird nests and eggs protected by this statute must be incorporated into project design, and construction plans and operations.

### 2.2.5 Migratory Birds – California Fish and Game Code § 3513

California Fish and Game Code § 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the MBTA, except as authorized in regulations adopted by the federal government under provisions of the MBTA. Except as permitted by USFWS, avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into project design, and construction plans and operations.

### 2.2.6 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) defines water quality objectives as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisances within a specific area." Thus, water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both waters of the U.S. and waters of the State. In the State of California, Porter-Cologne is administered in concurrence with § 401 CWA WQC.

### 2.2.7 State Water Resources Control Board Resolution No. 2019-0015

The California Code of Regulations, Title 23, Section 3831(w) states that "[a]ll waters of the United States are also 'waters of the state.'" This regulation has remained in effect despite Supreme Court decisions such as Rapanos and SWANCC, which added limitations to what could be considered a water of the U.S. Because the interpretation of waters of the U.S. in place at the time § 3831(w) was adopted was broader than any post-Rapanos or post-SWANCC regulatory definitions that incorporated more limitations into the scope of federal jurisdiction, it is consistent with the Water Boards' intent to include both historic and current definitions of waters of the U.S. into the SWRCBs wetland jurisdictional framework.

As set forth in Resolution No. 2009-0026, although the state of California has historically relied primarily on requirements in the Clean Water Act to protect wetlands, U.S. Supreme Court rulings reducing the jurisdiction of the Clean Water Act over wetland areas by limiting the definition of "waters of the United States" necessitated the use of California's independent authorities under the Porter-Cologne Act to protect these vital resources.

The inclusion of both current and historic definitions of "waters of the U.S." ensures some regulatory stability in an area that has otherwise been in flux. The status of a water of the U. S. may only be used to establish that a wetland or water qualifies as a water of the State; it cannot be used to exclude a wetland or water from qualifying as a water of the State. In other words, wetlands that are categorically excluded from qualifying as a water of the U.S. may nevertheless qualify as waters of the State under another jurisdictional category. Examples of waters of the State include (but are not limited to) ephemeral streams and isolated wetlands.

On April 2, 2019, the SWRCB adopted Resolution No. 2019-0015, Amendment to the Water Quality Control Plan for Ocean Waters of California and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California to Establish a State Wetland Definition and Procedures for Discharges of Discharges of Dredged or Fill Material to Waters of the State (Procedures). for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. As they apply to this project, the Procedures provide the SWRCB and its nine RWQCBs to approve a project only if the applicant has demonstrated certain requirement. (SWRCB, 2019).

On April 6, 2021, the SWRCB issued Resolution No. 2021-0012 confirming that the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State" (1) are in effect as state policy for water quality control for all waters of the State and (2) shall be applied via the inland surface waters and enclosed bays and estuaries plan to only waters of the United States.

When a discharge is proposed to waters outside of federal jurisdiction, the SWRCB and the RWQCBs regulate the discharge under Porter-Cologne through the issuance of Water Discharge Requirements (WDRs). WDRs and waivers of WDRs are referred to as orders or permits. The SWRCB and its nine RWQCBs have the authority to regulate the discharge of dredged or fill material under Resolution Nos. 2019-0015 and 2021-0012. Dischargers that do not require a federal permit or license that authorizes impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as § 404 CWA and § 10 of the Safe Rivers and Harbors Act, must obtain a WDR or a waiver of a WDR from the SWRCB or RWQCB to ensure that the discharge does not violate state water quality standards or any other appropriate requirement of State law.

**Basin Plans**

The SWRCB requires its nine RWQCBs to develop water quality control plans (Basin Plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations. This project is under the jurisdiction of the Lahontan RWQCB.

**Construction Stormwater Program**

The SWRCB implements water quality regulations under the federal CWA and Porter-Cologne and requires compliance with the National Pollutant Discharge Elimination System (NPDES) for discharges of stormwater runoff associated with a construction activity.

Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-009-DWQ, as amended). Construction Activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation,

but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns. The SWRCB will provide Construction General Permit review and permitting services for this project.

### 2.2.8 Lake or Streambed Alteration Agreement

Sections 1600-1617 FGC of the California Fish and Game Code (FGC) protect the natural flow and the bed, channel, and bank of any river, stream, or lake designated by the CDFW which is at any time an existing fish or wildlife resource, or a waterbody from which these resources derive benefit. General project plans must be submitted to CDFW in sufficient detail to indicate the nature of the project proposed for construction, if the project would:

- Divert, obstruct, or change a streambed;
- Use material from the streambeds;
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

The Inland Deserts Region (Region 6) of the CDFW serves San Bernardino County and would provide LSA Notification Review and Agreement services for this project.

### 2.2.9 Natural Community Conservation Planning Act of 2003 (NCCP Act)

The California Natural Community Conservation Planning Act (NCCP Act) was enacted to encourage broad-based planning to provide for effective protection and conservation of the State's wildlife resources while continuing to allow appropriate development and growth (California Fish and Game Code §§ 2800 to 2835). NCCPs may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses. An approved NCCP enables the California Department of Fish and Wildlife to authorize take of species consistent with the NCCP Act and California Fish and Game Code § 2835.

## 2.3 Local Policies and Ordinances

### 2.3.1 City Municipal Code, Title 16 – Development, Chapter 16.24

The City aims to promote conservation efforts of native desert plants through regulation, guidelines and enforcement that provides for the management and the removal or harvesting of such plants. They are also necessary to augment and coordinate with the State Department of Food and Agriculture in its efforts to implement and enforce the Desert Native Plant Act. The provisions of Chapter 16.24 apply to "*all private land within the city and to public lands owned by the city except as specified by the provisions of this chapter*". Article II Section 16.24.150 provides that "*all plants*

*protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits.*" In addition, the preparation and submission of a Protected Plant Preservation Plan is required by City municipal code. (City of Hesperia; 1997). Native desert vegetation addressed under the municipal code as per Article II Section 16.24.150 include the following, which would require a permit for removal as per Section 16.24.040:

*1. "The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:*
*(a)Dalea, Spinosa (smoketree)*
*(b) All species of the family Agavaceae (century plants, nolinas, yuccas)*
*(c) All species of the genus Prosopis (mesquites).*

*2. Creosote rings, ten feet or greater in diameter.*
*3. All Joshua trees (mature and immature)."*

# 3.0 METHODS

## 3.1 Literature Review

Prior to the field survey, biologists conducted a literature review to identify habitats, special-status plant and wildlife species, critical habitats, and wildlife movement corridors potentially associated with the project site. Biologists reviewed relevant literature, databases, agency web sites, reports and management plans, Geographic Information System (GIS) data, maps, and aerial imagery obtained from public domain sources. The review also helped to determine which biological surveys may be required prior to site construction and development. The following resources were utilized in order to conduct the literature search:

### 3.1.1 Sensitive Plant Communities and Special-Status Species

The data sources described below were reviewed to generate a list of special-status plants and wildlife with reported occurrences within the vicinity of the BSA. The literature review and query of the databases for reported locations of sensitive plant communities and special-status species helped to identify the known locations of these resources in the project region and assisted in identifying the potential for onsite occurrence of such species.

- CDFW's California Natural Diversity Database (CNDDB) was used to identify sensitive plant communities and special-status species documented within a ten-mile radius of the project site (CNDBB, 2022a)
- The USFWS' Information, Planning, and Conservation (IPaC) system was used to identify listed plant and wildlife species reported within the vicinity of the BSA (USFWS, 2022a).
- Previous consultant studies and reports near the project site and project vicinity were reviewed to gain a sense of the existing conditions at the time the studies were conducted.
- Google Earth Pro satellite imagery of the project site and vicinity (Google Earth Pro, 2022)

- The Natural Resources Conservation Service's (NRCS's) Custom Soil Resource Report for the BSA downloaded from the Web Soil Survey (Soil Survey Staff, 2022)
- USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle (USGS, 2015)

**Sensitive Plant Communities**

CDFW defines sensitive plant communities as "communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental impacts of projects" (CDFW, 2018). These communities are a valuable biological resource due to their rarity and/or their provision of habitat for special-status species. The most current version of CDFW's *California Natural Community List* indicates which natural communities are sensitive given the current state of the California classification (CDFW, 2022a). The *California Natural Community List* includes alliance rankings according to their degree of imperilment. For this BRE, plant communities are considered sensitive if they meet any of the following criteria:

- Recognized and considered sensitive by CDFW, USFWS, and/or special interest groups such as the CNPS, or local municipalities such as the City.
- Habitat is under the jurisdiction of the USACE pursuant to Section 404 of the CWA and/or is under the jurisdiction of the CDFW pursuant to §§ 1600-1612 of the California Fish and Game Code.
- Known or believed to be of high priority for inventory in the CNDDB.
- Considered to be regionally rare.
- Has undergone a large-scale reduction due to increased encroachment and development.
- Supports special-status plant and/or wildlife species.
- Functions as an important corridor for wildlife movement.

**Special Status Plants**

A literature review and query from publicly available databases was conducted for reported occurrences within a ten-mile radius of the project site (plant inventory). The following resources were used to analyze plant species potential to occur within the BSA:

- Rare Plant Program, Inventory of Rare and Endangered Plants (CNPS, 2022a)
- California Natural Diversity Database (CNDDB, 2022a)
- USFWS Information for Planning and Consultation (USFWS, 2022a)
- Jepson Flora Project (Jepson eFlora, 2022)
- Information on California Plants (Calflora, 2022)

**Special-Status Wildlife:**

A literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a) was conducted for reported occurrences within a ten-mile radius of the project site. The following resources were used to analyze wildlife species potential to occur within the BSA:

- All About Birds (Cornell Lab of Ornithology, 2022)

- USFWS Information for Planning and Consultation (USFWS, 2022a)
- USFWS ECOS species profiles (USFWS, 2022b)
- CDFW California Wildlife Habitat Relationships Life History Accounts and Habitat Range Maps (CDFW, 2022b)

### 3.1.2 Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

Aerial imagery was reviewed to identify natural and man-made drainages, open water (lakes, ponds, etc.), wetlands and other features that may be subject to federal or state jurisdictional authority within the BSA. The USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle was reviewed to identify potential presence or absence of onsite and offsite watercourses, and topographic features than may be indicative of water features. Topographic maps do not show all drainages that may exist.

The National Wetlands Inventory (NWI) database and maps developed by the USFWS were used as preliminary indicators of potential wetland areas based on changes in vegetation patterns as observed from satellite imagery (USFWS, 2022c). The NWI data were viewed in GIS platforms (Google Earth Pro, 2022), including the USFWS Wetlands Mapper (USFWS 2022c) to identify potentially jurisdictional features within the project area as indicated from topographic changes or visible stream patterns. The digital wetland data for the project vicinity was later ground-truthed during biological surveys.

The USGS National Hydrography Dataset (NHD) was also used to identify hydrologic features such as rivers, streams, canals, lakes, and ponds. (USGS, 2022).

Additionally, the watershed boundary data set containing the most current 10-digit and 12-digit HUCs was obtained in geodatabase form from the USGS to aid with assessing USACE jurisdiction of waters draining the project site (USGS, 2022)

The following were also reviewed and consulted:

- *Corps of Engineers Wetlands Delineation Manual (i.e.,1987 Manual; Environmental Laboratory, 1987).*
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008) (referred to as Arid West Supplement in this BRE)*
- *The National Wetland Plant List 2018 List (USACE, 2018).*
- *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley, 2008).*
- *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Curtis and Lichvar, 2010).*
- *United States Department of Agriculture National Resources Conservation Service Hydric Soils List (USDA-NRCS, 2022).*
- Waters Geoviewer, (USEPA, 2022)

The USACE published the *1987 Manual* for the identification and delineation of wetlands which have since been superseded and presented in regional supplements. In 2008, the USACE published the

Arid West Supplement, which is a supplement to the *1987 Manual* that describes wetland indicators, delineation guidance, and other information that is specific to the arid west region (USACE, 2008). The 1987 Manual and the Arid West Supplement are collectively referred to herein as the 1987 Manual.

### 3.1.3 Critical Habitat

When a species is listed as federally endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. Under the ESA, the federal government is required to designate "critical habitat" for each species it lists under the ESA. Federal agencies are prohibited from authorizing, funding or carrying out actions that "destroy or adversely modify" critical habitats. Section 3 of the ESA defines critical habitat for a threatened or endangered species as [ESA § 3(5)(A)]:

- *The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of § 4 of the ESA, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection*; and
- *Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of § 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species*.

Designated critical habitats are described in 50 CFR Parts 17 and 226. Critical habitat may include areas that are not currently occupied by the species, but that will be needed for its recovery. In addition, the USFWS normally excludes developed areas within mapped critical habitat boundaries as critical habitat. Within areas occupied by a listed species, the following factors indicate critical habitat (USFWS, 2022d):

- *space for individual and population growth and for normal behavior*;
- *cover or shelter*;
- *food, water, air, light, minerals, or other nutritional or physiological requirements*;
- *sites for breeding and rearing offspring*; and
- *habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of a species*.

The USFWS' Critical Habitat Portal and IPaC were reviewed to identify federal threatened and endangered species designated final and proposed critical habitat designations within ten miles of the project site (USFWS, 2022a, d).

### 3.1.4 Wildlife Corridors

To determine the potential for the BSA to contain wildlife corridors, UltraSystems biologists reviewed the USGS 7.5-Minute Topographic Map *Baldy Mesa* Quadrangle and viewed aerial imagery to search for physical features that might serve as a wildlife corridor. Biologists also used the BIOS Habitat Connectivity Viewer to search for CDFW Essential Connectivity Areas, and Natural Landscape

Blocks within the vicinity of the BSA (CDFW, 2022c). In addition, biologists used GIS software (Google Earth Pro, 2022) to determine the project site's location in relation to areas that could serve as wildlife corridors. Finally, the literature review also included maps and reports on wildlife home ranges and migration and dispersal patterns (CDFW, 2014).

### 3.1.5 Local Policies and Ordinances

The City's municipal ordinances, general plan and other documents were reviewed. The purpose of reviewing these documents was to determine if any City regulations protected resources not covered by federal or state regulatory agencies, or if City regulations had more stringent protections of biological resources protected by state or federal regulatory agencies.

## 3.2 Field Survey Methods

This section describes the field survey methods used by a UltraSystems biologist, Dr. Michael Tuma (biologist; Dr. Tuma), within the BSA during the reconnaissance-level biological survey. Dr. Tuma visited the BSA to conduct the following assessments during the survey:

- Habitat assessment and land cover type mapping
- Sensitive plant community assessment
- General plant survey
- General wildlife survey
- Jurisdictional waters/wetlands assessment
- Wildlife movement evaluation
- Step 1: Burrowing owl and desert tortoise habitat assessment

The purposes of the field work were to evaluate the initial results of the literature review and to collect additional data on existing site conditions. The general biological survey covered accessible areas of the BSA, including areas that will be impacted by the project. The survey was conducted during the daytime on foot by walking slowly across each habitat type, where accessible. The UltraSystems biologist used binoculars from strategic vantage points whenever direct access was not possible due to private property with no access rights, chain-linked fences, and locked gates. Observations were also made with aerial imagery for inaccessible areas.

During the survey, the UltraSystems biologist used topographic and aerial maps to help navigate in the field and pertinent regional flora and fauna field guides to identify and record special-status species and to assist with identifying plant communities, wildlife habitats, and physical features. Digital color photographs were taken during the field surveys to record site conditions at the time of the field surveys. Specific methods for each type of biological assessment are described in the sections below.

### 3.2.1 Habitat Assessment and Land Cover Type Mapping

The purpose of the habitat assessment was to identify and map habitat areas such as plant communities and other land cover types and to ascertain if existing site conditions could be suitable for special-status plant and wildlife species. Dr. Tuma characterized the existing land cover types including plant communities during the habitat assessment. He also identified and recorded plant and wildlife species, conducted a habitat assessment for special-status wildlife species such as burrowing owl (*Athene cunicularia*) [BUOW], evaluated the potential for wildlife corridors, and determined if jurisdictional waters (including wetlands) were present within the BSA.

The plant communities and other land cover types observed were identified and mapped in the field by marking their limits on a color aerial map. Descriptions of plant communities, within the BSA were based on the dominant perennial plant species. Generally, classifications of habitat types or plant communities were based on *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009), *Preliminary Descriptions of the Terrestrial Communities of California* (Holland, 1986), with modifications to better represent existing site conditions. The classifications were then checked against CDFW's *Natural Community List* (CDFW, 2022a) to determine if any of the plant communities were designated as sensitive by the CDFW.

Topography, soil characteristics, substrates, and disturbed and developed areas were also components of the habitat assessment in order to search for special-status plants and wildlife. Following the field mapping, UltraSystems GIS staff took the habitat boundaries from the aerial map and digitized the boundaries into an ArcGIS file. Once the boundaries were in the ArcGIS, the acreage of each land cover present within the BSA was then calculated.

### 3.2.2 Waters of the U.S. or State (Jurisdictional Waters/Wetlands) Assessment

This section describes the assessment methods used by the Dr. Tuma to identify potential waters of the U.S. or State (i.e., jurisdictional waters/wetlands) within the project site. The purpose of the field survey was to evaluate the initial results of the literature review and to collect additional data on existing site conditions. The Dr. Tuma investigated the project site for potential jurisdictional areas, including presence of streams or drainages with a definable bed, bank, or channel or evidence of an ordinary high water mark. areas of standing water, or depressions that had evidence of containing standing water for part of the year. Finally, Dr. Tuma assessed if there were any additional wetland indicators such as wetland hydrology, hydric soils or hydrophytic vegetation. Areas of the BSA which are developed and did not contain any exposed drainages were not surveyed.

## 4.0 RESULTS

This section describes the results of the literature review and the existing conditions within the BSA at the time the biological field surveys were conducted (environmental baseline). Photographs of the BSA that were taken during the field surveys can be found in **Appendix C**, *Site Photographs*. The reconnaissance-level biological survey was conducted by Dr. Tuma on August 24, 2022 between 2:45 and 4:00 PM. Weather conditions during the survey included clear skies with winds averaging between 0 to 4 miles per hour, and temperatures between 92- and 93-degree Fahrenheit.

## 4.1 Environmental Setting

Topography of the project site is relatively level; surfaces slope slightly in a southwesterly direction. Elevation ranges from approximately 3613 to 3624 feet amsl. The project site is located south of Poplar Street between Three Flags Avenue and Mesa Linda Street. The project site is surrounded by undeveloped lands to the north, industrial development to the west and south, and Interstate 15 to and undeveloped lands to the east (Google Earth Pro, 2022)

The climate of Hesperia is arid and characteristic of the regional Mojave Desert. In the vicinity of Hesperia, the Mojave Desert receives on average 8.5 inches per year. Summers are typically dry with occasional and scattered monsoon rain events that originate in the Gulf of California, whereas winter precipitation events are more significant and originate from the jet stream off the Pacific Ocean. The Mojave Desert exhibits a dry season extending from April through October, with an average of 0.1 inch of rain per month, and a wetter season between November through March, with an average of 0.5 inch of rain per month. Summers (June through September) are very hot, with an average high of 94 degrees Fahrenheit °F and low of 65°F. Winters (November through March) are cooler, with an average high of 57°F and low of 35°F [WRCC, 2022].

## 4.2 Soils

Based on the USDA NRCS Soil Survey, the BSA contains Hesperia loamy fine sand, 2 to 5 percent slopes (Soil Survey Staff, 2022). This soil type occurs in fan aprons, with granite-derived alluvium as the parent material. This soil map unit is not listed on the National Hydric Soils List as hydric (USDA NRCS, 2022). The A horizon of the onsite soils are comprised of 0 to 5 percent rocks varying in size from two millimeters to two centimeters in diameter (see **Appendix D** , *Soils Report*); see **Appendix A,** Figure 5, *USDA Soils*).

## 4.3 Plant Communities and Land Cover Types

### 4.3.1 Developed/Ornamental

Portions of the BSA off the project site consist of developed areas with some landscaped areas with ornamental vegetation. Developed areas structures, roads, sidewalks, paving, and other impermeable surfaces that are associated with industrial development in the area and that cannot support vegetation. Ornamental areas include bare ground, lawns, and native or non-native ornamental vegetation. Non-native oleander shrubs (*Nerium oleander*) and non-native tree species, including crepe myrtle (*Lagerstroemia* sp.) and carrotwood tree (*Cupaniopsis anacardioides*) are incorporated into landscaping on road margins, sidewalk medians, and around buildings within the BSA. Most of the species planted in the sidewalk medians and around buildings consist of a mix of drought-tolerant native and non-native plant species (see **Appendix A**, Figure 6 *Land Cover Types*).

### 4.3.2 Disturbed California Juniper Woodland

California juniper woodland community occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms in soils that are porous, rocky, coarse, sandy, or silty, and often very shallow (Sawyer et al.,

2009; CNPS, 2022b). The project site appears to have been a former California juniper woodland that has been mostly cleared from the site. Natural vegetation remaining on the project site in this community includes one large California juniper shrub and several western Joshua trees. A recent grubbing of the site, likely conducted within a month prior to the biological reconnaissance survey, removed several western Joshua trees, as evidenced by stumps in the ground and numerous branches and other western Joshua tree parts distributed on the ground surface. Less disturbed examples of California juniper woodland community are distributed in the project vicinity, including off-site portions of the BSA. Other native shrub species observed in this community in off-site locations include peach thorn (*Lycium cooperi*), Great Basin sagebrush (*Artemisia tridentata*), Nevada ephedra (*Ephedra nevadensis*), rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat (*Eriogonum fasciculatum*), and California broomsage (*Lepidospartum squamatum*). The distribution of this community within the BSA is depicted in **Appendix A**, Figure 6 *Land Cover Types*.

### 4.3.3 Disturbed

Disturbed lands consist of exposed soils that have undergone some type of disturbance such as compaction by vehicle traffic, mowing, disking, excavation or other type of alteration of the soil surface. These lands often consist of ruderal vegetation dominated by non-native, weedy species. An extensive area of disturbed lands is located in the western portion of the project site and in other, smaller areas on the project site and within the BSA on adjacent lands. The larger disturbed area is bare ground that has been used as a parking area for a long period. Other disturbed lands on the project site and within the BSA include dirt trails and unpaved road shoulders. These areas of mostly bare but include sparsely distributed weedy vegetation that includes red brome (*Bromus rubens*) and prickly Russian thistle (*Kali tragus*). The distribution of disturbed lands within the BSA is depicted in **Appendix A**, Figure 6 *Land Cover Types*.

## 4.4 Plants

### 4.4.1 Plant Species Recorded During Surveys

Six living western Joshua trees and numerous western Joshua tree stumps were observed on the project site during the field survey, However the project area is dominated by ruderal species such as red brome and prickly Russian thistle. There is evidence that the project site was formerly vegetated with western Joshua tree/juniper woodlands, however the significant disturbances that have occurred have resulted in compacted soils and dominance by ruderal species. Plant and wildlife species were recorded during the habitat assessment survey can be accessed in BRE **Appendix E,** *Plant and Wildlife Species Recorded During the Field Surveys*.

Because of development and disturbances in the area, just a small diversity native and non-native plant species was observed within the BSA. Species included non-native, ornamental species in developed areas, non-native, weedy species in disturbed areas, and remnants of California juniper woodland community. **Attachment 5**, *Species Observed,* provides a complete list of observed species.

One non-native species, red brome (*Bromus rubens*), is rated High by the California Invasive Plant Council (Cal-IPC), indicating that the species has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure [Cal-IPC, 2006].

### 4.4.2 Special-Status Plant Species with Potential to Occur in the BSA

Based on a literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a) for reported occurrences within a ten-mile radius of the project site, two listed and 11 sensitive plant species were identified by one of the following means: reported in the plant inventory, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey. Of these 13 species, seven sensitive species were determined to have only a low potential to occur and therefore are not anticipated to be impacted as a result of the project. One listed (candidate for state listing as threatened) species in the plant inventory, western Joshua tree, was observed on the project site. (see **Table 1**).

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**Table 1**
**SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR IN THE BSA**

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | |
| **Listed Endangered, Threatened, Candidate and State Rare Plants:** Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing. | | | | | | | | |
| *Yucca brevifolia (=Yucca baccata var. brevifolia)* | western Joshua tree | SCT | Lifeform: tree<br>Habitats: desert flats, slopes, sagebrush, desert shrub, pinyon-juniper, desert grasslands<br>Soils: silts, loams, and/or sands that are fine, loose, well drained and/or gravelly; alkaline or saline soils<br>Bloom Period: April to May | 1,312 - 6,561 | Yes | Yes | Yes | **Present.** There are six individual Joshua trees on the project site. |
| **Sensitive Plants:** These plants have no official status under the ESA, the CESA, and/or the NPPA; however, they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations. | | | | | | | | |
| *Asclepias nyctaginifolia* | Mojave milkweed | CRPR: 2B.1 | Lifeform: perennial herb<br>Habitats: Mojavean desert scrub and pinyon and juniper woodlands<br>Soils: sandy soils, often near washes<br>Bloom Period: May to June | 2,870 – 5,580 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Calochortus plummerae* | Plummer's mariposa-lily | CRPR: 4.2 | Lifeform: perennial bulbiferous herb<br>Habitats: chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland<br>Soils: granitic and rocky<br>Bloom Period: May to July | 330 – 5,580 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Canbya candida* | white pygmy-poppy | CRPR: 4.2 | Lifeform: annual herb<br>Habitats: Joshua tree woodland Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: granitic, gravelly, and sandy<br>Bloom Period: March to June | 1,970 – 4,790 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | |
| *Chorizanthe xanti* var. *leucotheca* | white-bracted spineflower | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: coastal scrub (on alluvial fans), Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: gravelly (sometimes) and sandy (sometimes)<br>Bloom Period: April to June | 985 – 3,935 | Yes | Yes | No | **Low.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Eremothera boothii* ssp. *boothii* | Booth's evening-primrose | CRPR: 2B.3 | Lifeform: annual herb<br>Habitats: Joshua tree woodland and pinyon and juniper woodland<br>Soils: rocky, gravelly, and sandy<br>Bloom Period: April to September | 2,675 – 7,875 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Loeflingia squarrosa* var. *artemisiarum* | sagebrush loeflingia | CRPR: 2B.2 | Lifeform: annual herb<br>Habitats: desert dunes, Great Basin scrub, and Sonoran desert scrub<br>Soils: sandy<br>Bloom Period: April to May | 2,295 – 5,300 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Opuntia basilaris* var. *brachyclada* | short-joint beavertail | CRPR: 1B.2 | Lifeform: perennial stem<br>Habitats: chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland<br>Soils: rocky, gravelly, and sandy<br>Bloom Period: April to June | 1,395 – 5,905 | Yes | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

**Legend and Notes**

**Federal Endangered Species Act (ESA) Listing Codes:** the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened plants is published in 50 CFR § 17.12.
• **FE** = federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.

**California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes**: the CESA and NPPA are administered by CDFW. The official listing of Plants of California Declared to Be Endangered, Threatened or Rare is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.
• **SE** = state-listed as endangered: "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).

**California Rare Plant Ranks** (Formerly known as CNPS Lists): the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment. •
**CRPR 1B = California Rare Plant Rank 1B** - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.
***California Native Plant Society (CNPS) Threat Ranks:*** *The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.*
• ***.1 =*** *seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)*
• ***.2****=moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)*
***Notes:***

The BSA contains approximate elevations of 3,606 to 3,620 feet amsl.
The BSA occurs on an alluvial fan in Victor Valley.
**Yes** = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.
**Low** = low potential to occur within the BSA

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Based on an analysis of the biological, physical and environmental conditions necessary for each special-status plant species identified in the plant inventory (Calflora, 2022; CNDDB, 2022a; CNPS, 2022a, b; Google Earth Pro, 2022; Jepson Flora Project, 2022; Sawyer et al., 2009; Soil Survey Staff, 2022; USEPA, 2022; USFWS, 2022a, b, c; see **Appendix A,** Figure 7, *CNDDB Known Occurrences Plant Species*), it was determined that seven of the 13 special-status species identified in the plant inventory were determined to have a low potential to occur in the BSA; four were determined to have no potential to occur or are not expected to occur. In these cases, species were determined to have no potential to occur or are not expected to occur because the project site lacks suitable habitat or is outside of a particular species geographic or elevation range. The following plant species were determined to have no potential to occur or are not expected to within the BSA for the abovementioned reasons (see **Table 2** for a description of the species status ranking notations):

- Mojave tarplant (*Deinandra mohavensis*) SE, CRPR: 1B.3
- black bog-rush (*Schoenus nigricans*) CRPR: 2B.2
- southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*) CRPR: 1B.2
- San Bernardino aster (*Symphyotrichum defoliatum*) CRPR: 1B.2

For the remaining species for which there is suitable habitat in the BSA, their potential to occur there was assessed as being 'low' for the following reasons: (1) The site has been grubbed recently and cleared and disked, perhaps repeatedly, in recent years; (2) There is evidence of vehicles driving on the site and disking the soil; this soil disturbance would decrease the likelihood of geophytes establishing onsite; (3) The operation and parking of vehicles in portions of the site may contribute to soil compaction. Many plant species cannot establish in compacted soils; (4) The project site was historically part of an alluvial fan that received surface water flow. This hydrological process no longer occurs within the BSA due to development of roads and buildings and other activities altering fluvial patterns. Thus, plant species dependent on periodic surface water flows are unlikely to establish within the BSA; and (5) The project site is adjacent to urbanized and residential developments, which thus reduces the nearby propagule sources of special-status plant species that could colonize the BSA. The following plant species, listed with their respective statuses, were determined to have low potential to occur within the BSA for the abovementioned reasons (see **Table 2** for a description of the species status ranking notations):

- Mojave milkweed (*Asclepias nyctaginifolia*) CRPR: 2B.1
- white pygmy-poppy (*Canbya candida*) CRPR: 4.2
- white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) CRPR: 1B.2
- Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*) CRPR: 2B.3
- sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) CRPR: 2B.2
- short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) CRPR: 1B.2

**Table 2**
**Special-Status Plant and Wildlife Species Ranking Notations**

| **California Endangered Species Act Listing Codes** | |
|---|---|
| **SE** | State listed as Endangered |
| **ST** | State listed as Threatened |

**Federal Endangered Species Act Listing Codes**

**FE** Federal listed as Endangered
**FT** Federal listed as Threatened

**California Department of Fish and Wildlife (CDFW) Designations**:

**SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.

**Fully protected**: fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).

**WL = watch list**: this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.

**California Rare Plant Ranks (Based on ranking system developed by the California Native Plant Society [CNPS])**

**CRPR: 1A – California Rare Plant Rank 1A - plants presumed extirpated in California and either rare or extinct elsewhere:** the plants with a CRPR of 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. All of the plants constituting CRPR 1A meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CRPR: 1B – California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere**: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CRPR: 2B – California Rare Plant Rank 2B - plants rare, threatened, or endangered in California, but more common elsewhere:** except for being common beyond the boundaries of California, plants with a CRPR of 2B would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the ESA. All of the plants constituting CRPR 2B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**CNPS Threat Ranks** –

.1 – seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 – moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
**.3** = not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

### 4.4.3 Listed Endangered, Threatened, Candidate, and State Rare Plants

One candidate for listing under CESA, western Joshua tree, was observed during the field survey.

### 4.4.4 Sensitive Plants

No sensitive plants were observed during the field survey.

## 4.5 Wildlife

### 4.5.1 Wildlife Species Recorded During the Field Surveys

Two wildlife species were directly observed during the August 24, 2022 field survey, including common raven (*Corvus corax*) and rock pigeon (*Columba livia*). Sign of California ground squirrel (*Otospermophilus beecheyi*) was observed in the BSA and project site in the form of active burrows.

### 4.5.2 Special-Status Wildlife Species with Potential to Occur in the BSA

Based on a literature review and query from publicly available databases (USFWS 2022a, CNDDB 2022a; see **Appendix A**, Figure 8, *CNDDB Known Occurrences Wildlife Species*) for reported occurrences within a ten-mile radius of the project site, there were 16 listed and 25 sensitive wildlife species identified by one of the following means: reported in the search, recognized as occurring based on previous surveys or knowledge of the area, or observed during the habitat assessment survey. Of those 41 total species, five listed and six sensitive wildlife species were determined to have at least a low potential to occur in the BSA (see **Table 3**). A total of 30 special-status wildlife species in the wildlife inventory were determined to have no potential to occur or are not expected to occur because the BSA lacks suitable habitat or is outside of the elevation/geographic range of these species. A total of 9 special-status wildlife species in the wildlife inventory were determined to have at least a low potential to occur in the BSA and it is anticipated that construction of the project will have less than a significant impact on the majority of those special-status wildlife species.

**Table 3**
**SPECIAL-STATUS WILDLIFE WITH A POTENTIAL TO OCCUR IN THE BSA**

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| **Listed Endangered, Threatened, and Candidate Wildlife:** Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing. | | | | | | |
| **Listed Invertebrates** | | | | | | |
| *Euphydryas editha quino (=Euphydryas editha wrighti)* | quino checkerspot butterfly | FE | Habitats: grasslands, remnant forbland, open coastal sage scrub, open chamise chaparral, open red shank chaparral, juniper woodland, and semi-desert scrub, open or sparsely vegetated rounded hilltops, ridgelines, rocky outcrops of chaparral and coastal sage scrub<br>Soils: loamy soils with moderate to high amounts of clay<br>Characteristics: adult butterflies will only deposit eggs on species they recognize as host plants | Yes | No | **Low.** The BSA contains some desert scrub habitat, however it exists in a disturbed state. In addition, the soils in the BSA do not contain a high clay faction; this species typically occurs in areas with clay-loam soils. The soils of the BSA are primarily loamy-fine-sand**.** |
| *Bombus crotchii* | Crotch's bumble bee | candidate endangered | Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats: This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. | Yes | Yes | **Low.** The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA**.** |
| **Listed Reptiles** | | | | | | |
| *Gopherus agassizii* | desert tortoise | FT, ST | Habitats: Desert scrub communities, most typically creosote scrub.<br>Soil: friable soils for burrowing | Yes | No | **Low**. The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Listed Birds** | | | | | | |
| *Buteo swainsoni* | Swainson's hawk | ST | Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands<br>Characteristics: nest in juniper trees of juniper-sage flats not near riparian zones | No | Yes | **Low.** The BSA is located within the historical breeding range of the species, but breeding populations are likely extirpated from the region. The BSA supports marginal foraging and there is low potential for migrating or transient individuals to forage in the BSA. There is no potential for the species to nest within the BSA. |
| **Listed Mammals** | | | | | | |

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: Located Within Species' Distribution and/or Elevation Range (if known) | The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| *Xerospermophilus mohavensis* | Mohave ground squirrel | ST | Habitats: Desert scrub communities.<br>Soil: sandy, loamy soils for burrowing | Yes | No | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Wildlife:**<br>These animals have no official status under the ESA and/or the CESA; however, they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations | | | | | | |
| **Sensitive Invertebrates** | | | | | | |
| *Bombus crotchii* | Crotch's bumble bee | SCE | Habitats: open grassland and scrub habitats<br>Characteristics: food plants include predominantly native flowering plant species | Yes | No | **Low**. The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Reptiles** | | | | | | |
| *Phrynosoma blainvillii* | coast horned lizard | SSC | Habitats: open areas with low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral with open areas.<br>Characteristics: often found in sandy, loose soils, particularly near native ant hills | Yes | No | **Low.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Sensitive Birds** | | | | | | |
| *Accipiter cooperii* | Cooper's hawk | WL | Habitats: broken woodland and habitat edges<br>Characteristics: tolerant of human activities near the nest and is seen more often nesting in urban/residential areas | Yes | No | **Low**. This species has adapted to disturbed environments and human activity. There is marginal foraging habitat and low potential for this species to forage in the BSA. Due to a lack of suitable nesting habitat (trees) there is no potential for the species to nest in the BSA. |
| *Athene cunicularia* | burrowing owl | SSC | Habitats: inhabits open grasslands and scrublands. Occupies and nests in burrows of other animals, especially those of California ground squirrels, but also those of coyotes and desert tortoises, among others.<br>Characteristics: somewhat tolerant of human disturbances | Yes | Yes | **High.** The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of |

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| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| | | | | | | human disturbances. Due to these factors, there is high potential for the species to occur in the BSA. |
| *Falco mexicanus* | prairie falcon | WL | Habitats: associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub.<br>Characteristics: Requires sheltered cliff ledges for cover and nesting | Yes | No | **Low**. The BSA does not contain suitable nesting habitat (rocky cliffs), and there is no potential for this species to nest in the BSA. There is marginal foraging habitat in the BSA, and there is low potential for this species to occur in the BSA as a forager. |
| *Lanius ludovicianus* | loggerhead shrike | SSC | Habitat: open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns<br>Characteristics: prefers areas with lookout posts, such as fence posts and wires, trees, tall shrubs | Yes | Yes | **Moderate.** The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. |
| **Sensitive Mammals** | | | | | | |
| *Antrozous pallidus* | pallid bat | SSC | Habitats: Inhabits rocky outcrops and canyons; roost sites include crevices and caves. Forages over open grasslands and scrublands near sources of water.<br>Characteristics: Has adapted roosting in buildings. | Yes | No | **Low**. The BSA does not contain suitable roosting habitat (rocky areas) needed to support populations of the species. There are no open water sources in the BSA and only marginal foraging habitat there. There is low potential for this species to occur in the BSA as a forager. |
| **Legend and Notes** | | | | | | |
| ***Federal Endangered Species Act (ESA) Listing Codes:*** the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.<br>• **FE = federally listed as endangered:** any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range**.** | | | | | | |
| ***California Endangered Species Act (CESA) Listing Codes***: the CESA is administered by CDFW. The official listing of Animals of California Declared To Be Endangered or Threatened is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.<br>•**SCE** = state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068). | | | | | | |

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| ***California Department of Fish and Wildlife (CDFW) Designations:*** For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering<br>• **SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.<br>• **WL = watch list:** this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species. | | | | | |
| *Notes*<br>The BSA contains approximate elevations of 3,606 to 3,620 feet amsl.<br>**Yes** =. Further evaluation is needed.<br>**No potential to occur** = the species has no potential to occur in the BSA due to a lack of factors required to support the species.<br>**Not expected to occur** = the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.<br>**Low** = low potential to occur within the BSA; the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species.<br>**Moderate** = moderate potential to occur within the BSA; the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. | | | | | | |

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Based on an analysis of the biological, physical and environmental conditions necessary for each special-status wildlife species identified in the wildlife inventory, it was determined that the majority of those species have no potential to occur or are not expected to occur in the BSA (CNDDB, 2022a, Google Earth Pro, 2022, USFWS, 2022a, b, c, d). In most cases, species were determined to have no potential to occur or are not expected to occur because the project site lacks suitable habitat or is outside of a particular species geographic or elevation range.

Some species for which there is suitable habitat in the BSA were determined to have no potential to occur or are not expected to occur for the following reasons: (1) Although not developed at a high density, the areas surrounding the project site contain some urbanized developments with paved roadways; the hazards such as traffic noise and other disturbances reduce the likelihood that certain species would establish or regularly forage in the BSA; (2) The significant disturbances that have occurred have resulted in compacted soils and dominance by ruderal species. Plant and wildlife species were recorded during the habitat assessment survey can be accessed in of **Appendix E**, *Plant and Wildlife Species Recorded During the Field Surveys*.; (3) There is evidence of vehicles driving on the site and disking the soil; this soil disturbance would decrease the likelihood of fossorial mammal species or bird or reptile species that utilize burrows establishing onsite; (4) the project site and other disturbed areas in the BSA frequently undergo grading, which would likely deter fossorial and ground-nesting birds from utilizing the project site for nesting; and (4) Street lights and traffic noise may cause certain species to avoid the BSA. Several wildlife species, listed with their respective statuses, were determined to have no potential to occur or are not expected to occur based on the abovementioned reasons. See **Appendix F** *Special-Status Species Inventory and Occurrence Potential Determination* for a discussion of these species and the description of their respective status ranking notations):

### 4.5.3 Listed Endangered, Threatened, and Candidate Wildlife

No federally listed endangered, threatened, or candidate wildlife species were observed during the field survey. Five listed wildlife species were determined to have a low potential to occur in the BSA.

### 4.5.4 Sensitive Wildlife

No sensitive wildlife species were observed during the field survey. The two sensitive wildlife species determined to have a high or moderate potential to occur are discussed below.

**High Potential to Occur**

**Burrowing owl**

The burrowing owl is a small, crepuscular (active at dusk and dawn), ground-inhabiting owl that is found largely throughout the southern United States. Typical BUOW habitat is open, dry, flat ground or low rolling hills with sparse vegetation and available burrows (Gallagher, 1997). BUOWs spend most of their time on the ground or on low perch sites such as fence posts and dirt mounds. They are generally found in open country, where tree or shrub canopies cover less than 30 percent of the habitat.. Typical habitat includes annual and perennial grasslands, shortgrass prairies, open agricultural areas (particularly rangelands), desert floors, and vacant lots in residential areas and

university campuses. Other habitat includes oak savannah; grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitat; sandy beaches and coastal dunes; and river bottom lands. BUOWs inhabiting urban landscaped areas may live in vacant fields/lots, pastures, airports, athletic fields, golf courses, cemeteries, city parks, road shoulders, drainage sumps, railroad beds, irrigation ditches, and road cuts. The BUOW is primarily a dry grassland species, but it persists and can even thrive in some landscapes that are highly altered by human activity, such as agricultural areas in the Central and Imperial valleys. They require large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal burrows. Vegetation cover and height that prevents the owl from observing approaching predators places the BUOW at a severe disadvantage (Center for Biological Diversity et al., 2003). They are the only small owl likely to be seen perched in the open daylight (Center for Biological Diversity et al. 2003; CWHR, 2014; Cornell Lab of Ornithology, 2022; Sibley, 2000; Shuford et al. 2008).

Suitable BUOW habitat must also support the primary prey items for BUOWs, such as insects and small mammals. BUOWs are opportunistic predators preying primarily on a broad array of arthropods (centipedes, spiders, beetles, crickets, and grasshoppers), and small rodents, but they also eat birds, amphibians, reptiles, and carrion. They may hunt from a perch, hover, hawk, run, walk, dive or hop after prey.

The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of human disturbances. Due to these factors, there is high potential for the species to occur in the BSA.

**Moderate Potential to Occur**

**Loggerhead shrike**

The loggerhead shrike (*Lanius ludovicianus*) is a CDFW Species of Special Concern, which is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status. Loggerhead shrike is also a USFWS Bird of Conservation Concern (BCC), which is a bird species listed in the USFWS' 2008 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. This species inhabits areas with scattered shrubs, trees, posts, fences, utility lines, or other

hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and western Joshua tree habitats. The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, western Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. Construction of the project would involve grading of the entire project site and the western Joshua trees and juniper would be significantly impacted as a result. Although there is suitable habitat for loggerhead shrike on the project site, the area of suitable habitat that would be destroyed by grading activities is relatively small and does not represent an expansive area of suitable habitat for this species. Therefore, the loss of this area would not have a substantial effect on the availability of loggerhead shrike habitat or population levels statewide. These impacts do not meet the threshold of significance set forth in Section 15065 of the California Environmental Quality Act (CEQA) Guidelines. Therefore, construction of the project would have a less than significant impact on loggerhead shrike (Cornell Lab of Ornithology, 2022; CWHR, 2014; Grinnell and Miller, 1944; McCaskie et al. 1979; Garrett and Dunn, 1981; Miller, 1931).

## 4.6 Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

The BSA does not contain jurisdictional Waters of the United States (Waters of the U.S.) or Waters of the State. The project site is located within the Oro Grande Wash hydrologic unit (HU; USGS HU code 180902080704) and within the Mojave River Watershed (USGS HU code 18090208), which encompasses approximately 4,500 square miles (see **Appendix A,** Figure 9, *USGS Surface Waters and Watersheds*). The Mojave River Watershed drains the northern areas of the San Bernardino Mountains (USEPA, 2022; Google Earth Pro, 2022).). There is an NWI-mapped riverine area located approximately 0.65 west of the project site (USFWS, 2022c).

Although drainages, depressions, and other topographic features that would be conducive to wetlands formation were not identified within the BSA. The runoff from the project site travels to the southwest, joining this riverine area, however the project proponent has prepared a Water Quality Management Plan (WQMP) which is designed to retain stormwater generated onsite (Allard Engineering, 2022a)

## 4.7 Critical Habitat

The BSA does not overlap with any USFWS critical habitat, and there are no critical habitats mapped by USFWS within a 5-mile radius of the project (see **Appendix A**, Figure 10, *USFWS Critical Habitat*).

## 4.8 Wildlife Corridors

The BSA does not overlap with CDFW Essential Connectivity Areas, Natural Landscape Blocks, or other wildlife corridors. The nearest CDFW-mapped wildlife corridor to the project site is Choke-point, 395 South of Ridgecrest. This linkage is located approximately 1.2 miles south of the project site (CDFW, 2022c). See Figure 11. The areas south and west adjacent to the project are developed with structures intended for commercial use. Although the project's surroundings contain undeveloped areas, the project will be constructed in an area that would not cause significant new

habitat fragmentation, and would not significantly impede the passage of wildlife, therefore resulting in less than significant impact.

Construction and operation of the proposed project would not significantly interfere with the movement of native resident or migratory fish or wildlife species or with native resident or migratory wildlife corridors. Less than significant impact would occur, and mitigation is not proposed.

California ground squirrel burrows were recorded on-site during the field survey and a small resident population occurs onsite. Ground disturbing activities such as disking, bulldozing and excavating would lead to eviction, death, or injury of individual squirrels of this common species, which would not be considered a significant impact.

The CDFW classifies both California ground squirrels as nongame animals, and as such, property owners can legally take these species (Baldwin, 2019; Quinn et al., 2018). No mitigation is required for the take of this fossorial species. The direct impacts of construction of the project to nursery sites of fossorial species would be less than significant (see **Appendix A**, Figure 11, *CDFW Wildlife Corridors*).

## 5.0 POTENTIAL IMPACTS

This section discusses potential significant effects or impacts, if any, to the environmental baseline and sensitive biological resources that could result from project construction and development. This is an important step in the CEQA process. Biological resources may be either "directly" or "indirectly" impacted by a project (defined by CEQA Guidelines § 15358). Direct and indirect impacts may be either "permanent" or "temporary" in nature. These impact categories are defined below:

- **Direct impact**: Direct impacts are those that may cause an immediate effect on the species or its habitat and occur at the same time and place. Any loss, alteration, disturbance or destruction of biological resources that could result from project-related activities is a direct impact. Examples include vegetation clearing and loss of habitat, encroaching into wetlands, diverting natural surface water flows, and the loss of individual species.
- **Indirect impact**: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Indirect impacts are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Indirect impacts can affect biological resources within the project site, adjacent to the project site, or away from the project site. Examples of indirect impacts include increased human activity, elevated noise, light, and dust levels, decreased water quality, soil compaction, erosion created by the removal of vegetation, and the introduction of invasive plants and unnatural predators. Indirect impacts may be both short term and long-term in their extent. Indirect impacts are also referred to as "edge effects".
- **Permanent impacts** (long term): All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a

building or permanent road on an area containing biological resources. Permanent impacts cannot be mitigated in-place

- **Temporary impacts (short term**): Impacts considered to have reversible impacts to biological resources can be viewed as temporary. Examples include short-term increased vehicle traffic and noise and the generation of fugitive dust during construction; or removing vegetation and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Temporary impacts can be reversed with the implementation of in-place mitigation measures.

This section describes the significance criteria used for determining impacts to biological resources. As mentioned in the CEQA Guidelines (§ 15064.7[a]), each public agency is encouraged to develop and publish thresholds of significance (significance criteria) that it uses to determine the significance of environmental impacts. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental impact, non-compliance with which means the impact will normally be determined to be significant by the agency and compliance with which means the impact normally will be determined to be less than significant.

Significance criteria serve as benchmarks for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. CEQA Guidelines § 15065(a) states that a project may have a "significant impact" on the environment if the project has the potential to:

- Substantially degrade the quality of the environment,
- Substantially reduce the habitat of a fish or wildlife species,
- Cause a fish or wildlife population to drop below self-sustaining levels,
- Threaten to eliminate a plant or animal community, or
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species.

The Environmental Checklist Form in Appendix G of the CEQA Statute and Guidelines (2014) was reviewed in order to determine the level of significance of project related impacts to biological resources. Under CEQA Guidelines impacts to biological resources are considered potentially "significant" if one or more of the following thresholds are exceeded with construction and operation of the project.

**Threshold 1**: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and USFWS.

**Threshold 2:** The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW and USFWS.

**Threshold 3**: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

**Threshold 4:** The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

**Threshold 5**: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

**Threshold 6**: The project would conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Significant impacts can be reduced to less than significant levels by incorporating off-setting conservation measures, including BMPs, avoidance and protection measures, and/or mitigation measures. Less than significant impacts are those in which impacts would occur, but are not expected to be substantial. Impacts to biological resources that are considered less than significant include impacts to biological resources that are reasonably widespread or exist in a degraded or disturbed state, rendering them less valuable as habitat to support wildlife diversity or special-status species, or impacts that do not meet or exceed the significance thresholds defined above. These less than significant impacts do not require conservation measures.

## 5.1 Potential Impacts to Plant Communities

The project site is situated on relatively level ground; no ephemeral, intermittent, or perennial streams or rivers were identified in the literature review or observed during the biological survey. The BSA does not support riparian habitat. There was one land cover type identified within the project site and three altogether within the BSA. The project site is covered by disturbed California juniper woodland, which is considered a sensitive plant community on the CDFW *California Natural Community List* (CDFW, 2022a). Direct impacts to this sensitive plant community are anticipated as a result of project development. Therefore, mitigation is required. **BIO-6** is discussed in **Section 6.1**.

**Significance criterion**

*Impacts would be considered significant if the project were to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS*.

In regard to the significance criterion, the project is anticipated to have an adverse effect on sensitive natural communities: **Less than Significant with Mitigation Incorporated**.

## 5.2 Potential Impacts to Special Status Plants

One candidate species for state listing as threatened was plant species (western Joshua tree) was observed on the project site. The literature review and field surveys concluded that other plant

species in the plant inventory do not have more than a low potential to occur within the BSA due to a lack of suitable habitat, soils, and/or other factors to support them; these species are not anticipated to be significantly impacted as a result of the project.

Direct or indirect impacts to special-status plant species (western Joshua tree) are anticipated as a result of construction of the project. Therefore, acquisition of a 2081 Incidental Take Permit, which is discussed in **Section 6.0**, is proposed. Additionally, mitigation is required to maintain compliance with the native desert vegetation protection provided in the City Municipal Code.

**Significance criterion**

*Impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS*.

The field survey results determined that the project site contains one listed plant species; therefore, the project will result in direct or indirect impacts to special-status plants. In regard to the significance criterion, the project is anticipated to have substantial adverse effect, either directly or through habitat modifications, to any species identified as a special-status species in federal, state, local or regional plans, policies, or regulations, or by CDFW or USFWS. With implementation of mitigation measures described below, these impacts would be reduced to a less than significant degree : **Less than Significant Impact with Mitigation Incorporated**.

## 5.3 Potential Impacts to Special-Status Wildlife

### 5.3.1 Direct Impacts

Potential direct impacts to common and special-status wildlife occupying the project site could occur from construction related mortality, injury, or harassment of individuals as a result of permanent development of the project site and from the removal and direct loss of breeding, foraging, and/or sheltering habitat. These impacts could be considered significant and potentially significant. Project development could diminish the habitat available for common and special-status wildlife species from utilizing the onsite habitat. Direct permanent impacts include all areas within the limits of grading in the project footprint.

Ground disturbing and habitat altering activities could involve significant disturbance to common and special-status ground-dwelling animals or nesting birds. Examples include grading, clearing, disking, grubbing, excavation, trenching, paving, mowing, heavy equipment compacting, driving over habitat to access the construction work sites, vegetation management activities, and use of herbicides and pesticides. Direct impacts to less mobile fossorial (burrowing) animals that are underground during most of the day or year (e.g., small mammals or lizards) or have a life stage in the soil or on plants (e.g., amphibians, nesting birds, insects) could occur from encounters with vehicles or heavy equipment as many of these animals do not run away from construction vehicles/equipment and would most likely be killed. These species could be expected to experience direct mortality, injury, harassment, and displacement from increased human activity and vehicle/equipment travel if they are present onsite within the project footprint at the time of construction. Individual losses are more

likely, especially during clearing and grubbing activities. Individuals could also be injured, disturbed, or killed from encounters with workers' or visitors' pets. Birds and bats could be injured or killed from collisions with transmission lines and wind turbines structures. Birds and bats could be injured or killed from electrocution from electric lines and structures. The loss of these animals could also affect other common and special-status wildlife that depend on them as prey. Construction related direct impacts are considered a significant impact.

**Listed Endangered, Threatened, and Candidate Wildlife:**

No listed wildlife species were observed within the BSA during the biological surveys. The results of the literature review and field surveys concluded that the following listed wildlife species have a low potential to occur within the BSA: Crotch's bumble bee, Mohave ground squirrel, and desert tortoise. All of the listed wildlife species in the wildlife inventory were determined to have no more than a low potential to occur. Therefore, no direct impacts to listed endangered, threatened, or candidate wildlife are anticipated as a result of construction of the project.

**Sensitive Wildlife**

**High Potential to Occur in the BSA**

**Burrowing Owl**

One special-status species, burrowing owl, was determined to have a high potential to occur in the BSA. There is suitable nesting, sheltering, and foraging habitat within the BSA for BUOW. The project site contains sparse shrub cover and friable soils which are preferred conditions for BUOW. Furthermore, burrowing owl are generally adaptive to disturbances and the frequent grading of the project site would not necessarily deter this species from establishing there. It is anticipated that construction of the project could have a significant impact on BUOW and therefore mitigation is proposed.

No special-status wildlife species were observed within the BSA during the biological surveys. The results of the literature review and field surveys concluded that the following sensitive wildlife species have at least a low potential to occur within the BSA: loggerhead shrike, desert kit fox, prairie falcon, Blainville's horned lizard, Swainson's hawk. and Cooper's hawk. See below for further discussion of these species [see Table 3].

### 5.3.2 Indirect Impacts

Indirect impacts could occur within areas located adjacent to the limits of construction in the project footprint. Indirect impacts are more subtle than direct ones. Impacts may either be short-term related to construction or long-term and may affect populations and habitat quality over an extended period of time, long after construction activities have been completed. Examples of indirect impacts, such as mortality, injury, or harassment of common and special-status wildlife species that could potentially occur from the project include the following:

- The permanent loss of habitat and physical features that would occur from clearing and grading could indirectly impact wildlife species through the loss of foraging, roosting, denning, and/or breeding habitat available. Habitat loss could displace species from existing territories and reduce the home range of those species and impact nearby populations of similar species. Displaced species would then have to compete for and/or find new territories and compete for food with resident species. This could result in delayed nest building, fewer nest attempts, reduced clutch size, and an overall reduction in reproductive output.
- Project construction could result in temporary increased ambient noise levels, dust, vibration, lighting and/or human intrusion in and near habitat. This could disrupt natural foraging, roosting, denning, and/or breeding behavior of wildlife species. Wildlife species stressed by these factors may disperse from habitat in the project site and project vicinity. In addition, increased noise levels could interfere with territorial and mating vocalizations, thereby interfering with wildlife reproduction.
- Project construction could increase fugitive dust, pollution, runoff, siltation, sedimentation, and erosion. This could result in degradation and alteration of habitat and soils. Consequently, the ability of onsite and adjacent plant communities to support wildlife populations may decrease.
- Nighttime construction work and use of artificial lighting could disrupt natural foraging and breeding behaviors and/or alter wildlife movement patterns and migratory routes of nocturnally active species such as mammals and snakes. Most animals would attempt to avoid moving in or near the lighting; however, some animals such as insects, migratory birds, and bats might be attracted to the lighting, increasing construction-related mortalities. Artificial lighting could also indirectly affect wildlife by increasing detection by predators. The new development could also provide an increase in artificial lighting and glare which could disrupt nocturnal wildlife behavior.
- An increase and continuation of human activities within and adjacent to the project site could lead to mortality, injury, or harassment of wildlife species by providing food in the form of trash and litter or water which attracts predators such as the common raven (*Corvus corax*), northern raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and coyote.

**Listed Endangered, Threatened, and Candidate Wildlife:**

No indirect impacts to endangered, threatened, or candidate wildlife species are anticipated as a result of construction of the project.

**Sensitive Wildlife**

There are potential indirect impacts of construction of the project on foraging and/or nesting behavior of sensitive wildlife species that have a moderate or high potential to occur throughout the BSA such as burrowing owl and loggerhead shrike. Both of these species would lose foraging and potential nesting habitat as a result of construction of the project. Therefore, mitigation is proposed and would reduce impacts from this loss of foraging and nesting habitat of these sensitive species.

### 5.3.3 Mitigation Measures

**Listed Endangered, Threatened, and Candidate Wildlife:**

Listed wildlife are not anticipated to be impacted as a result of the project; therefore, no mitigation is proposed.

**Sensitive Wildlife**

Sensitive wildlife could potentially be impacted by construction and project development, and mitigation is recommended. Implementing the recommended mitigation measures **BIO-2** through **BIO-5** (see **Section 6.0,** *Mitigation Measures*) will help to minimize or avoid impacts to sensitive wildlife that could potentially occur within the BSA.

Several mitigation measures will be implemented in order to minimize and avoid impacts to loggerhead shrike, burrowing owl, and other special-status wildlife species that could potentially occur on the project site. Mitigation measure **BIO-2** provides for the instatement of focused burrowing owl surveys with protection measures. Mitigation measure **BIO-3** provides for a pre-construction general wildlife survey, and **BIO-4** provides for implementation of a loggerhead shrike survey and protection measures. Implementation of mitigation measure **BIO-5** provides for the instatement of pre-construction breeding bird survey. All recommended surveys shall be conducted by a qualified biologist. With the implementation of mitigation measures **BIO-2** through **BIO-5**, the impacts of construction and project operations to sensitive wildlife would be less than significant.

### 5.3.4 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

**Listed Endangered, Threatened, and Candidate Wildlife:**

The project is not anticipated to have direct or indirect impacts to listed wildlife. In regard to the significance criterion, the project is anticipated to have no substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS: **Less than Significant Impact**.

**Sensitive Wildlife:**

Project construction is not expected to cause impacts to bird species that only forage at the site or occur as transient visitors. Implementing the recommended mitigation measures **BIO-2** through **BIO-5**, which are described in the Mitigation Measures section (**Section 6.0**), will help to minimize or avoid significant impacts to sensitive wildlife to less than significant levels: **Less than Significant Impact with Mitigation Incorporated**.

## 5.4 Potential Impacts to Breeding Birds

The BSA supports  shrub vegetation, and other physical features that could potentially provide foraging, nesting, and cover habitat to support an assortment of bird species (year-round residents, seasonal residents, and migrants). A majority of the birds observed during the field surveys and those birds that could potentially breed within the BSA are protected by the MBTA and Fish and Game Code § 3503, § 3503.5, and § 3513. The statutes make it unlawful to take native breeding birds, and their nests, eggs, and young.

### 5.4.1 Direct Impacts

Activities which are most likely to result in take of migratory birds during the breeding bird season when eggs or young are likely to be present include, but are not limited to, clearing or grubbing of bird nesting habitat; structure demolition; or vegetation trimming or clearing. The project has a low potential to directly take individual breeding birds, their nests, young, or eggs; therefore, mitigation is required.

### 5.4.2 Indirect Impacts

Indirect impacts to breeding birds could occur from increased noise, vibration, lighting and dust during construction, which could adversely affect the breeding behavior of some birds and lead to the loss (take) of eggs and chicks, or nest abandonment. The project has a low potential to indirectly affect individual breeding birds, their nests, young, or eggs; therefore, mitigation is required.

### 5.4.3 Mitigation Measures

Implementing the recommended mitigation measure**BIO-5**, which is described in the **Section 6.0** , will help to minimize or avoid potential impacts to breeding birds, their nests, young, or eggs. In particular, mitigation measure **BIO-5** provides for a pre-construction breeding bird survey in which biologists will take steps to protect any breeding bird and its nest observed prior to construction. Implementation of mitigation measure **BIO-5** will minimize the risk of nest loss during excavation activities.

### 5.4.4 Impact Determination

Project construction is not expected to cause impacts to bird species that only forage at the site or occur as transient visitors. Direct and indirect impacts to breeding birds, their nests, young, or eggs could potentially occur as a result of construction of the project. Given the relatively small size of the project footprint; the minor reduction of suitable nesting habitat; the nature of the disturbance; and the availability of other habitat within the immediate project vicinity, the potential impacts to breeding birds, their nests, young, or eggs would likely be minor. Implementing the recommended mitigation measures **BIO-5**, which is described in **Section 6.0** below, will help to avoid, eliminate or reduce significant impacts to breeding birds, their nests, young, or eggs to less than significant levels; therefore, it is anticipated that the project may impact breeding birds, their nests, young, or eggs, but the impacts will not be significant: **Less than Significant Impact with Mitigation Incorporated**.

## 5.5 Potential Impacts to Waters of the U.S. or State (Jurisdictional Waters/Wetlands)

The literature review and reconnaissance-level biological survey determined that there are no waters of the U.S. or State (i.e., jurisdictional waters/wetlands; see **Appendix A**, Figure 9, *USGS Surface Waters and Watersheds*; Figure 12, *National Wetlands Inventory*).

### 5.5.1 Direct or Indirect Impacts

No direct or indirect impacts to Waters of the U.S. or State are anticipated as a result of construction of the project.

### 5.5.2 Mitigation Measures

Waters of the U.S. or State are not anticipated to be impacted by construction of the project; therefore, no mitigation is proposed.

### 5.5.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

The project is not anticipated to have direct or indirect impacts to Waters of the U.S. or State. **No Impact**.

## 5.6 Potential Impacts to Critical Habitat

There are no mapped areas of critical habitat within a 5-mile radius of the project (USFWS, 2022d). .

### 5.6.1 Direct and Indirect Impacts

There are no adverse impacts to critical habitat anticipated as a result of the project.

### 5.6.2 Mitigation Measures

No mitigation measures are required for impacts to critical habitat, therefore no mitigation is proposed..

### 5.6.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

There will be no impacts to critical habitat because there are no mapped areas of critical habitat within a 5-mile radius of the project. **No Impact**.

## 5.7 Potential Impacts to Wildlife Corridors or Native Wildlife Nursery Sites

The literature review and field surveys determined that the project site does not contain wildlife corridors.

By contrast, direct impacts are anticipated to native wildlife nursery sites of fossorial species. UltraSystems biologist Dr. Tuma observed California ground squirrels during the field survey. These sightings of fossorial mammals and their burrows indicate that there may be resident populations of these species onsite. Thus, it is likely that fossorial mammal species give birth and raise young within the burrow complexes located onsite. Ground disturbing activities such as disking, bulldozing and excavating would lead to death and injury of fossorial species which do not typically evacuate their burrows during this type of disturbance.

### 5.7.1 Direct and Indirect Impacts

No direct or indirect impacts to wildlife corridors are anticipated as a result of construction of the project.

Although there would likely be direct impacts to nursery sites of fossorial species as a result of construction of the project, it is not anticipated that these impacts will be significant. The CDFG classifies California ground squirrels as nongame animals, and as such, property owners can legally take these species (Baldwin, 2019; Quinn et al., 2018). No mitigation is required for the take of this fossorial species. The direct impacts of construction of the project to nursery sites of fossorial species would be less than significant.

### 5.7.2 Mitigation Measures

Wildlife corridors are not anticipated to be impacted as a result of the project. Native wildlife nursery sites are anticipated to be impacted to a less than significant degree; therefore, no mitigation measures are required.

### 5.7.3 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.*

The literature review and field surveys determined that the project site does not contain wildlife corridors. While the project could potentially contain native wildlife nursery sites; impact as a result of the project is anticipated to be less than significant.. In addition, the project site does not support resident or migratory fish species. In regard to the significance criterion, the project is not anticipated

to interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors: **Less Than Significant Impact**.

## 5.8 Potential Impacts to Local Policies or Ordinances

The project site contains approximately six living western Joshua trees, a species that qualifies for protection under Article II, Section 16.24.150, which also provides that "*all plants protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits*" (City of Hesperia; 1997). A qualified City-approved biologist or arborist should be retained to conduct any future relocation/transplanting activities and should follow the protocol of the City's Municipal Code. As provided in Section 16.24.120 of City Municipal Code, "any person who willfully removes, or harvests or transplants a living desert native plant shall first obtain approval from the county to do so in accordance with the procedures set forth in Sections 16.24.040 or 16.24.110 et seq." (City of Hesperia, 1997). The City addresses all western Joshua trees as one of the protected vegetation types.

### 5.8.1 Direct and Indirect Impacts

It is not anticipated that there will be direct or indirect impacts to biological resources within the BSA that are not already more strongly protected by state and federal regulations.

### 5.8.2 Mitigation Measures

To mitigate for the impacts to the protected native desert vegetation on the project site, the project proponent will implement mitigation measure **BIO-7** which proposes that a native desert vegetation survey is conducted to aid in the creation of a Preservation Plan as required by the City. After implementation of **BIO-7**, which is further discussed below, impacts to protected native desert vegetation would be reduced to a less than significant degree.

### 5.8.3 Impact Determination

**Significance criterion**: *Impacts would be considered significant if the project were to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

The literature review determined that construction of the project does conflict with local policies or ordinances that protect biological resources. Implementation of mitigation measures will reduce these impacts to a less than significant degree: **Less than Significant Impact with Mitigation Incorporated.**

## 5.9 Potential Impacts to Habitat Conservation Plans

Development of the project would not conflict with an HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

### 5.9.1 Direct and Indirect Impacts

There are no anticipated conflicts with local habitat conservation plans as a result of construction of the project.

### 5.9.2 Impact Determination

**Significance criterion**: *impacts would be considered significant if the project were to conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.*

In regard to the significance criterion, the project will not conflict with the provisions of adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan: **No Impact.**

## 6.0 MITIGATION MEASURES

CEQA states that "mitigation measures are not required for effects which are not found to be significant" [§ 15126.4(a)(3)]. Therefore, no mitigation measures are proposed for impacts to biological resources that are less than significant. However; if significant impacts to biological resources are identified, then possible mitigation measures are recommended to minimize or avoid the level of the impacts to less than significant levels. There are several forms of mitigation. Under CEQA (§ 15370), "mitigation" includes all of the following:

- "Avoiding" the impact altogether by not taking a certain action or parts of an action.
- "Minimizing" impacts by limiting the degree or magnitude of the action and its implementation.
- "Rectifying" the impact by repairing, rehabilitating, or restoring the impacted environment.
- "Reducing" or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- "Compensating" for the impact by replacing or providing substitute resources or environments.

The following mitigation measures would help to minimize or avoid direct or indirect impacts to biological resources to less than significant levels and to comply with all appropriate environmental laws, ordinances, policies, regulations, and management plans.

## 6.1 BIO 1: 2081 Incidental Take Permit

Western Joshua trees are a state candidate for listing species under CESA and will require a 2081 Incidental Take Permit (ITP) with compensatory mitigation for impacts, in addition to the surveys that are discussed in Section e). The exceptions and permitting process under the California Desert Native Plants Act and the separate exceptions under the Native Plant Protection Act will not apply to

western Joshua tree in any manner. For projects where "take" is incidental to carrying out an otherwise lawful activity, an ITP may be obtained from CDFW.

## 6.2 BIO 2: Focused Burrowing Owl Surveys

Although BUOW was not detected on site during the general wildlife survey, the BSA contains suitable habitat to potentially support BUOW in the future. A qualified biologist would conduct a focused BUOW survey in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW, 2012).

Following the completion of the survey, the biologist would prepare a letter report summarizing the results of the survey. The report would be submitted to the City prior to initiating any ground disturbance activities.

If no BUOWs or signs of BUOW are observed during the survey and concurrence is received from Environmental Management Division of the San Bernardino County Department of Public Works (County EMD) and CDFW, project activities may begin and no further mitigation would be required.

If BUOW or signs of BUOW are observed during the survey, the site would be considered occupied. The biologist would implement the following protection measures and contact the City, EMD, and CDFW to assist in the development of avoidance, minimization, and mitigation measures, prior to commencing project activities. The list of potential measures to avoid and minimize impacts to BUOWs described in the above section would be implemented.

**BUOW Protection Measures**

If BUOWs or signs of BUOW are observed during the survey, then the site would be considered occupied and the biologist shall contact the City, EMD, and CDFW to assist in the development of avoidance, minimization, and mitigation measures discussed below, prior to commencing project activities.). If no BUOW or signs of BUOW are observed during the focused surveys, the components of this measure (discussed below) would not be applicable.

**Planning BUOW Protection**

Grading, construction, and other project activities on all grassland habitat will be delayed until the qualified biologist has implemented burrow exclusion and closure. No ground-disturbing activities within 50 meters (165 feet) of an active BUOW burrow will be permitted until burrow exclusion and closure have been implemented. No destruction of foraging habitat will be permitted until burrow exclusion and closure have been implemented.

**Pre-Construction BUOW Protection**

Prior to the initiation of grading and construction activities, the biologist shall implement passive relocation of an active BUOW burrow by installing a one-way door and then permanently excluding the BUOW from returning once it is confirmed that no BUOW individuals remain in the burrow. A biological monitor will visit the site daily to verify that the burrow is empty by monitoring and scoping the burrow.

**Construction BUOW Protection**

A biological monitor will be onsite to monitor any BUOW or signs of BUOW. If any BUOW are observed then the biologist will consult with the County EMD and CDFW to determine the appropriate measures.

## 6.3 BIO-3: Pre-Construction General Wildlife Survey

Special-status wildlife species that have no designated status under the ESA, the CESA, and/or the NPPA, but are designated as sensitive or locally important by federal agencies, state agencies, local agencies such as the RCA, and nonprofit resource organizations such as the CNPS are referred to as "sensitive" in this BRE. The following measures will be implemented to minimize impacts to these species which include but are not limited to: Blainville's horned lizard, prairie falcon, and desert kit fox. The measures below will help to reduce direct and indirect impacts caused by construction on various sensitive species to less than significant levels.

- A qualified biologist will conduct a pre-construction general wildlife survey for sensitive wildlife and potential nesting sites such as open ground, shrubs, and burrows within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

- If sensitive species and/or active nesting sites are observed during the pre-construction survey or they are observed and will not be impacted, project activities may begin and no further mitigation will be required.

- If any sensitive wildlife species are identified within the project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency to determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency. zone.

- Sensitive wildlife species and/or potential nesting sites will not be disturbed, captured, handled or moved

## 6.4 BIO-4: Loggerhead Shrike Survey and Protection Measures

The following measures are proposed in order to minimize impacts to loggerhead shrike, for which there is suitable habitat in the BSA.

- If activities occur during the breeding/nesting period, a wildlife survey will be completed by a qualified biologist to identify potential loggerhead shrike activity in the area of the project activities.

- Additional species surveys to determine presence/absence of birds prior to disturbances, from May 1 until the work start date, if the work start date is prior to August 31. Surveys are to occur weekly in May, every other week in June, and once per month in July and August (assuming no loggerhead shrike are observed).

- Incidental occurrences of other sensitive avian species such as Swainson's hawk. and Cooper's hawk should also be recorded during the survey.

## 6.5 BIO 5: Pre-Construction Breeding Bird Survey

To maintain compliance with the MBTA and Fish and Game Code, and to avoid impacts or take of migratory non-game breeding birds, their nests, young, and eggs, the following measures will be implemented. The measures below will help to reduce direct and indirect impacts caused by construction on migratory non-game breeding birds to less than significant levels.

- Project activities that will remove or disturb potential nest sites, such as open ground, trees, shrubs, grasses, or burrows, during the breeding season would be a potential significant impact if migratory non-game breeding birds are present. Project activities that will remove or disturb potential nest sites will be scheduled outside the breeding bird season to avoid potential direct impacts on migratory non-game breeding birds protected by the MBTA and Fish and Game Code. The breeding bird nesting season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions. Removing all physical features that could potentially serve as nest sites will also help to prevent birds from nesting within the project site during the breeding season and during construction activities.

- If project activities cannot be avoided during February 15 through September 15, a qualified biologist will conduct a pre-construction breeding bird survey for breeding birds and active nests or potential nesting sites within the limits of project disturbance. The survey will be conducted at least seven days prior to the onset of scheduled activities, such as mobilization and staging. It will end no more than three days prior to vegetation, substrate, and structure removal and/or disturbance.

- If no breeding birds or active nests are observed during the pre-construction survey or they are observed and will not be impacted, project activities may begin and no further mitigation will be required.

- If a breeding bird territory or an active bird nest is located during the pre-construction survey and will potentially be impacted, the site will be mapped on engineering drawings and a no activity buffer zone will be marked (fencing, stakes, flagging, orange snow fencing, etc.) a minimum of 100 feet in all directions or 500 feet in all directions for listed bird species and all raptors. The biologist will determine the appropriate buffer size based on the type of activities planned near the nest and the type of bird that created the nest. Some bird species are more tolerant than others of noise and activities occurring near their nest. This no-activity buffer zone will not be disturbed until a qualified biologist has determined that the nest is

inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by project activities. Periodic monitoring by a biologist will be performed to determine when nesting is complete. Once the nesting cycle has finished, project activities may begin within the buffer zone.

- If listed bird species are observed within the project site during the pre-construction survey, the biologist will immediately map the area and notify the appropriate resource agency to determine suitable protection measures and/or mitigation measures and to determine if additional surveys or focused protocol surveys are necessary. Project activities may begin within the area only when concurrence is received from the appropriate resource agency.

- Birds or their active nests will not be disturbed, captured, handled or moved. Active nests cannot be removed or disturbed; however, nests can be removed or disturbed if determined inactive by a qualified biologist.

## 6.6 BIO-6: Mitigation for Impacts to Western Joshua Tree and California Juniper Woodlands

**Avoidance and Minimization Measures**

The entirety of the project area, which is approximately 19 acres of California juniper woodland, is currently planned for development. The California juniper woodland is a sensitive natural community (CDFW, 2022a). As such, impacts as a result of the project, shall be mitigated so that all impacts to these habitats are mitigated on acreage and tree basis.

Proposed project activities including the construction phase, operations, and maintenance phase shall be designed to avoid California juniper woodland and western Joshua tree habitat to the maximum extent practicable. If the California juniper or associated western Joshua trees are removed as a result of project activities, then compensatory mitigation is required as follows.

The preferred compensatory mitigation is through an in-lieu fee to a qualified mitigation bank within the service area of the site, ideally within the same watershed. The project proponent shall coordinate with CDFW to identify appropriate mitigation banks and number of required mitigation credits to fully offset site impacts at a minimum of a 2:1 replacement to impact ratio.

However, applicant-responsible compensatory mitigation is acceptable through preparation of a Habitat Preservation and Protection Plan, to be approved by CDFW prior to project approval.

**Habitat Preservation and Protection Plan**

For applicant-responsible compensatory mitigation, then the project proponent shall enter into a binding legal agreement regarding the preservation of offsite lands describing the terms of the acquisition, enhancement, and management of those lands. Fee title to acquired habitat lands, or a conservation easement over these lands, shall be transferred to CDFW or to an entity approved by

CDFW, along with financial assurances (funds) for preservation, rehabilitation, and enhancement of the land, and an endowment for permanent management of the lands.

A formal Habitat Preservation and Protection Plan to detail methods for site preservation, restoration, monitoring, and protection shall be written. The plan will include permanent photo documentation points from the pre-restoration stage to the conclusion of the monitoring requirement. Photo documentation shall occur on a quarterly and annual basis or as required by CDFW. The number of Joshua and juniper trees existing onsite, transplanted, installed as container stock, will be recorded and qualitatively assessed quarterly and quantitatively assessed on an annual basis until performance criteria and/or contingency criteria are successfully attained. A final monitoring report will be provided at the conclusion of the post-construction restoration phase. The project proponent shall provide the final monitoring report to CDFW for approval of completion for the project.

## 6.7 BIO 7: Native Desert Vegetation Survey and Protected Plant Preservation Plan

A Preservation Plan will be prepared and submitted to the City, which is required by City Municipal Code. A native desert vegetation survey must be conducted to produce findings that will guide the formation of this plan. The survey objective is to evaluate the health and general condition of the western Joshua trees and creosote bush present on the project site. A project-specific Plan will provide further guidance regarding the transplant and/or preservation of the western Joshua trees and protection for creosote rings "*10 feet or greater in diameter*" as per Section 16.24.150 of City Municipal Code (City of Hesperia, 1997). Transplant suitability of the western Joshua trees will be determined by the results of the survey. This survey shall be conducted by a qualified City-approved biologist or arborist. The plan will incorporate survey data, identify and outline preconstruction survey methods for the native desert vegetation on the project site, describes preconstruction and construction-phase biological monitoring and transplant methods that are applicable, or outlines any identified CDFW permit and Memorandum of Understanding requirements for active relocation, if either are necessary. The Plan should be referred to for a detailing of protective actions regarding the western Joshua trees on the project site.

## 7.0 PERMITS AND APPROVALS

Listed (candidate for state listing as threatened; CNDDB 2022b) western Joshua tree was observed during the biological survey. Therefore it has been determined that the project would require a 2081 Incidental Take Permit, which can be obtained from CDFW.

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# APPENDIX A

**Figures**




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August 23, 2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community; UltraSystems Environmental, Inc., 2022

Scale: 1:633,600

N

0 5 10 Miles

0 5.5 11 Kilometers

**Legend**

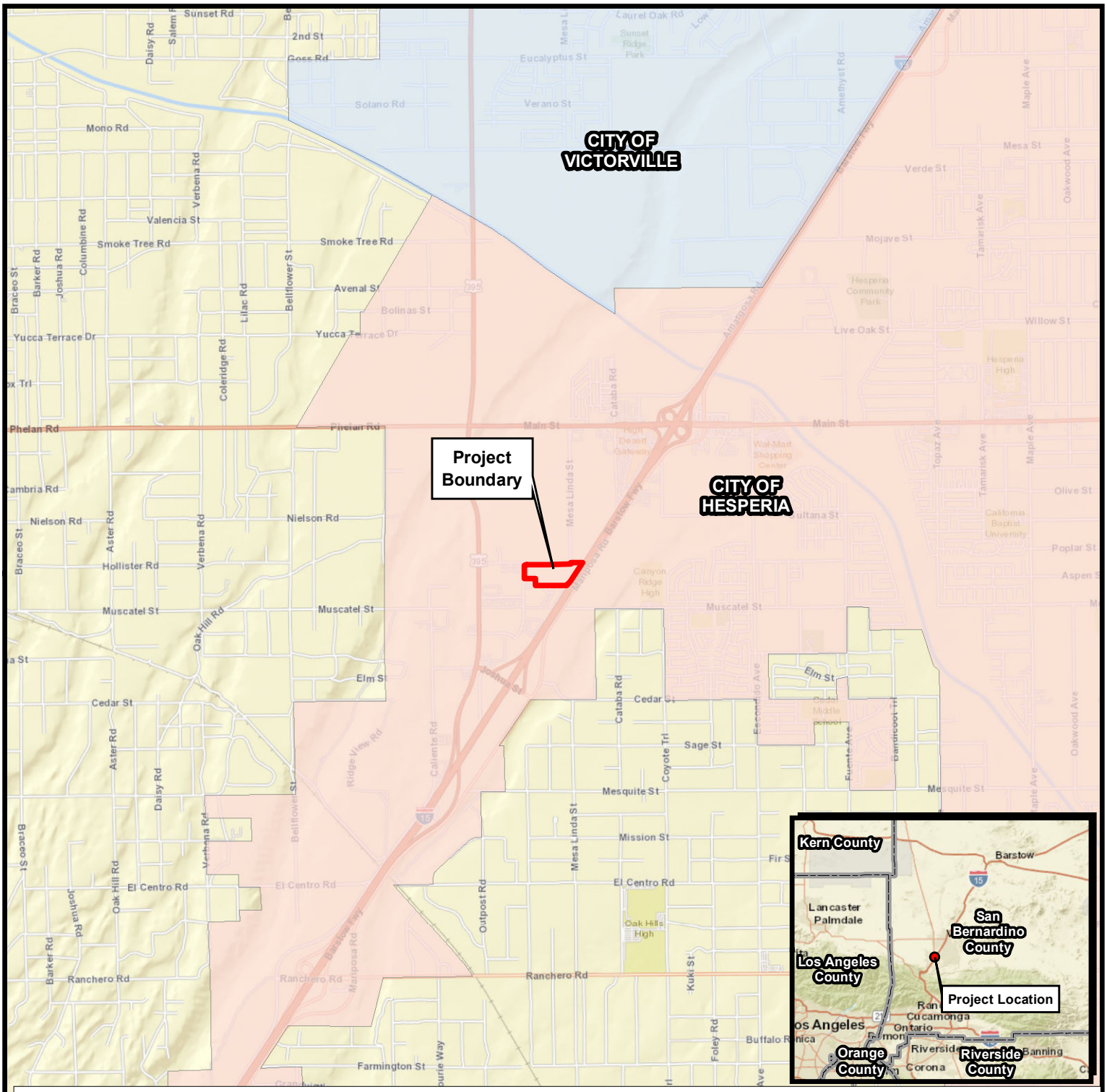
Project Location

County Boundary

**Cargo Solutions Truck Warehouse**

Regional Location
Figure 1

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August 23, 2022

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Scale: 1:48,000

N

0 2,000 4,000 Feet

0 500 1,000 Meters

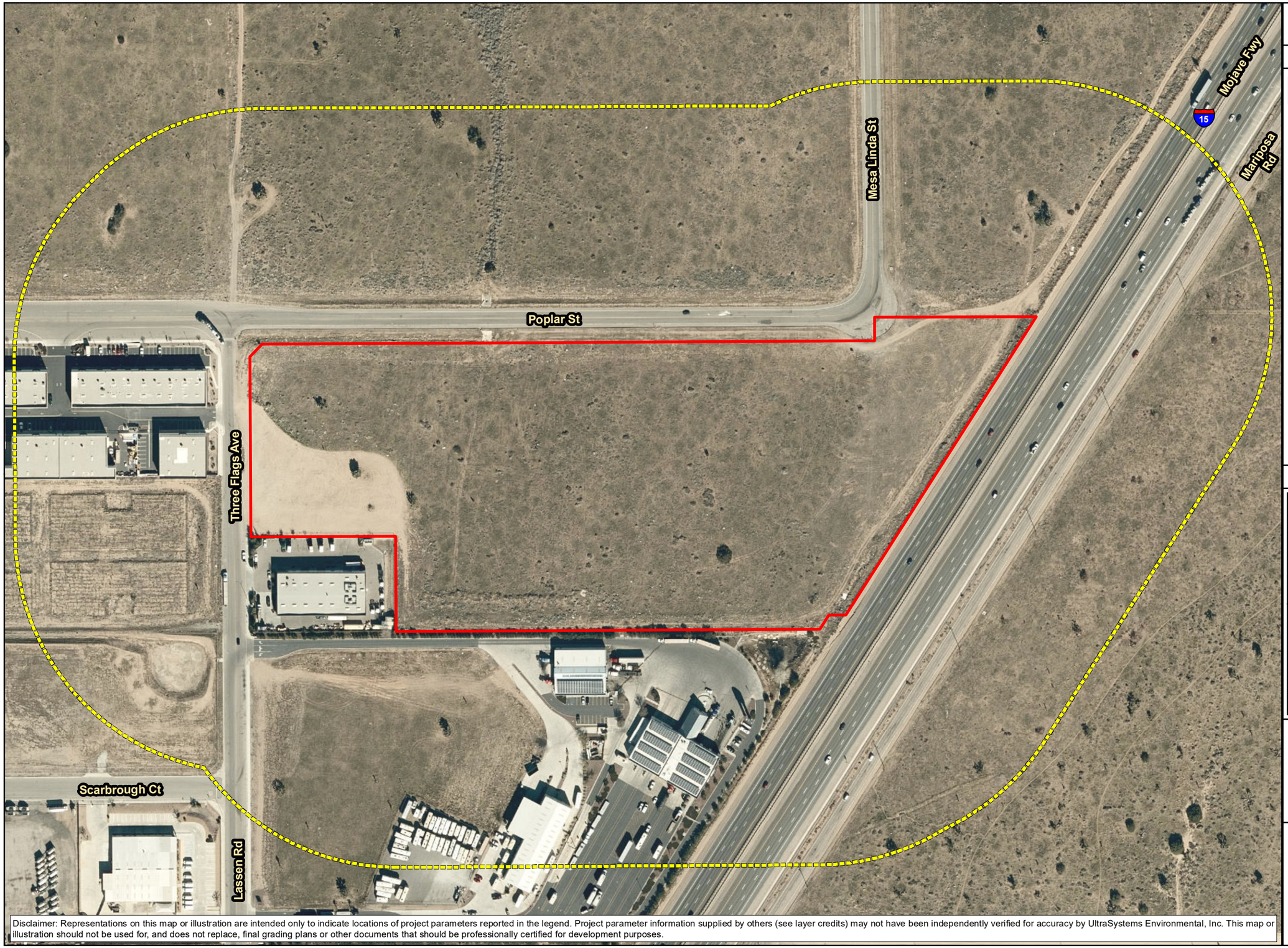
**Legend**

Project Location

**Cargo Solutions Truck Warehouse**

Project Vicinity
Figure 2

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***Cargo Solutions Truck Warehouse***

**Legend**

Project Location

500ft Biological Study Area

**Key Map**




0 100 200 Feet

0 20 40 Meters

N

Scale: 1:2,400

**Project Boundary and Biological Study Area (BSA)**

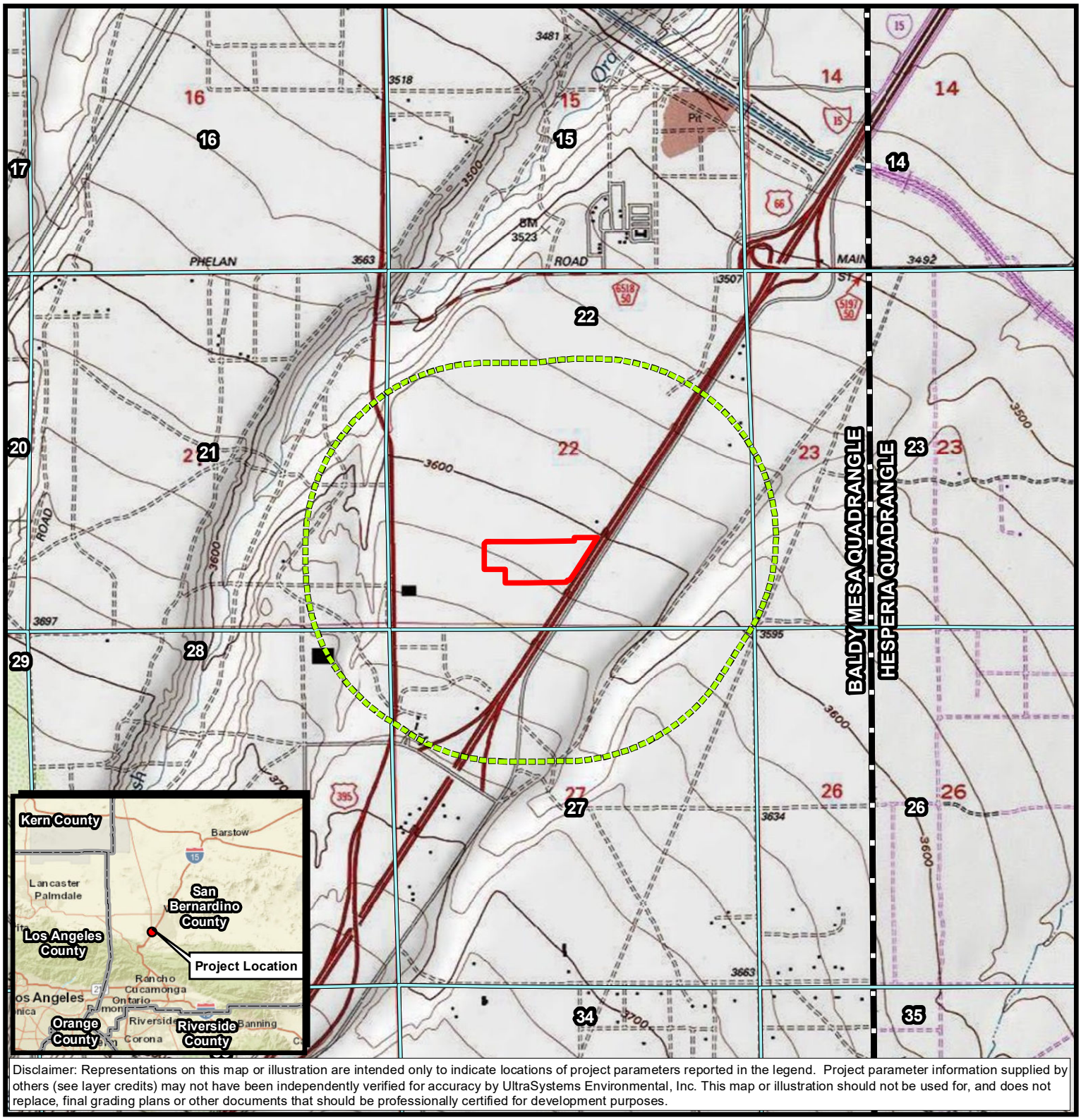
Figure 3

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Date

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August 16, 2022

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Scale: 1:24,000

N

0 1,000 2,000 Feet

0 250 500 Meters

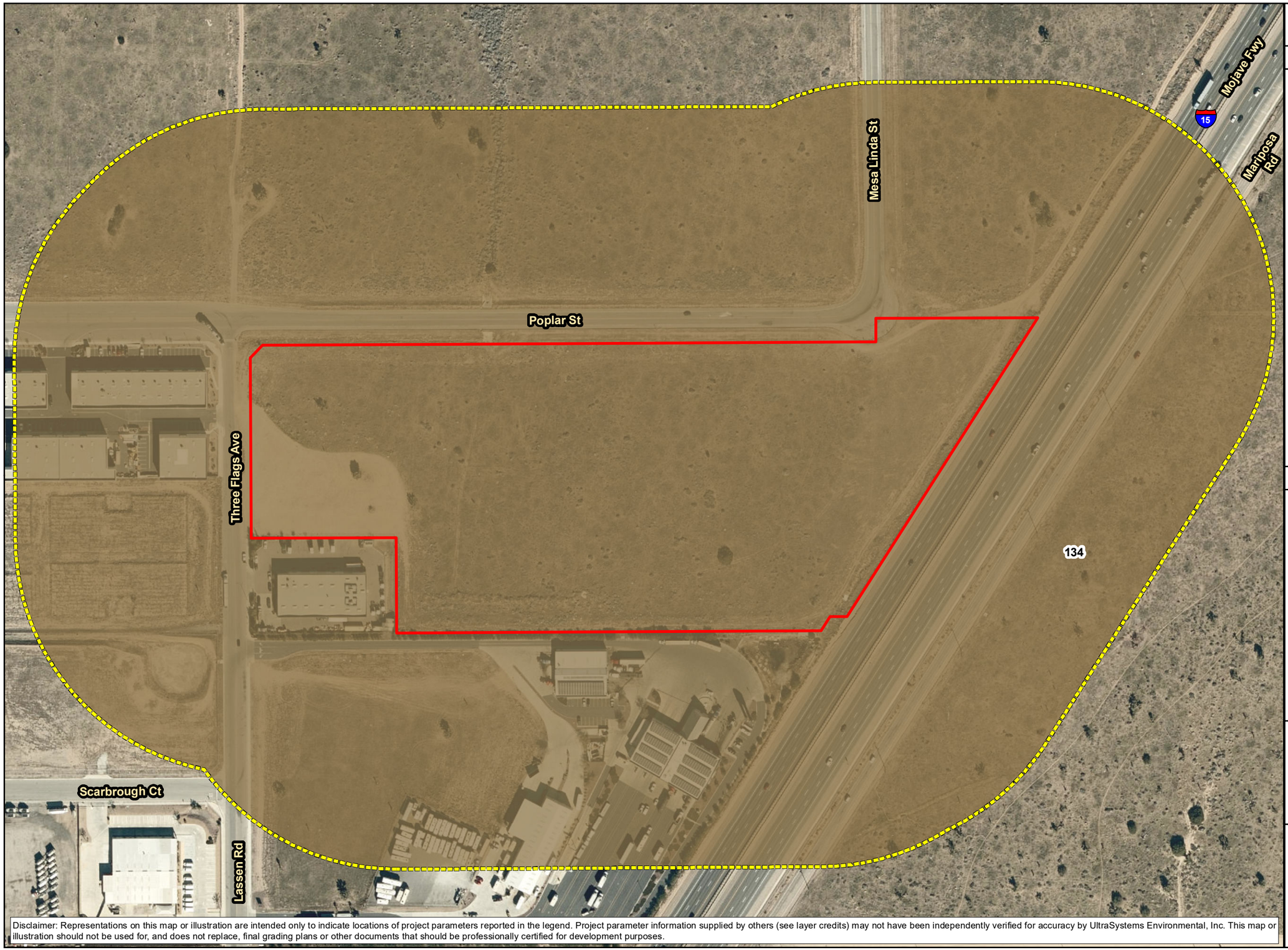
**Legend**

- Project Location
- Half-Mile Radius
- Quadrangle Boundary
- Section Boundary

**Cargo Solutions**
**Truck Warehouse**

Topographic Map
USGS Quadrangle: Baldymesa
Township: 4N Range: 5W
Section: 22
Figure 4

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***Cargo Solutions***
***Truck Warehouse***

**Legend**

Project Location

500ft Biological Study Area (BSA)

**USDA Soil Map Unit**

134-HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES

**Key Map**




0 100 200 Feet

0 20 40 Meters

N

Scale: 1:2,400

**USDA Soils**

Figure 5

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August 23, 2022

Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\BIO\7187_Cargo_Warehouse_4_4_Soil_2022_08_23.mxd
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# Cargo Solutions Truck Warehouse

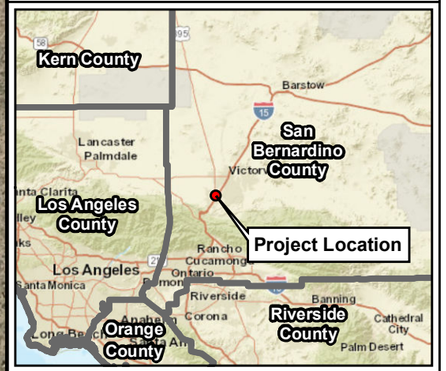
## Legend

- Project Location
- 500ft Biological Study Area (BSA)

**Land Cover Type**

- Disturbed California juniper woodlands (disturbed *Juniperus Californica* Woodland Alliance)
- Disturbed
- Developed

## Key Map




0 100 200 Feet

0 20 40 Meters

N

Scale: 1:2,400

## Land Cover Types

Figure 6

UltraSystems environmental • management • planning

Date

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## *Penske Sales, Leasing, and Maintenance Facility*

**Legend**

Project Boundary

2-Mile Radius

**Common Name, Scientific Name**

Southern Sycamore Alder Riparian Woodland, *Southern Sycamore Alder Riparian Woodland*

Smooth tarplant, *Centromadia pungens* ssp. *laevis*

**Key Map**




0 1,250 2,500 Feet

0 320 640 Meters

N

Scale: 1:30,000

**CNDDB Known Occurrences**
**Plant Species, and Habitats**
Figure 7

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October 07, 2021

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# Penske Sales, Leasing, and Maintenance Facility

## Legend

- Project Boundary
- 2-Mile Radius

**Common Name, Scientific Name**

- California horned lark, *Eremophila alpestris actia*
- Los Angeles pocket mouse, *Perognathus longimembris brevinasus*
- Riverside fairy shrimp, *Streptocephalus woottoni*
- San Bernardino kangaroo rat, *Dipodomys merriami parvus*
- Stephens' kangaroo rat, *Dipodomys stephensi*
- Burrowing owl, *Athene cunicularia*
- Coast horned lizard, *Phrynosoma blainvillii*
- Least Bell's vireo, *Vireo bellii pusillus*
- Loggerhead shrike, *Lanius ludovicianus*
- Northwestern San Diego pocket mouse, *Chaetodipus fallax fallax*
- Pocketed free-tailed bat, *Nyctinomops femorosaccus*
- Red-diamond rattlesnake, *Crotalus ruber*
- Southern grasshopper mouse, *Onychomys torridus ramona*
- Western spadefoot, *Spea hammondii*
- Western yellow bat, *Lasiurus xanthinus*

## Key Map




0 1,250 2,500 Feet

0 320 640 Meters

N

Scale: 1:30,000

## CNDDB Known Occurrences Wildlife Species

Figure 8

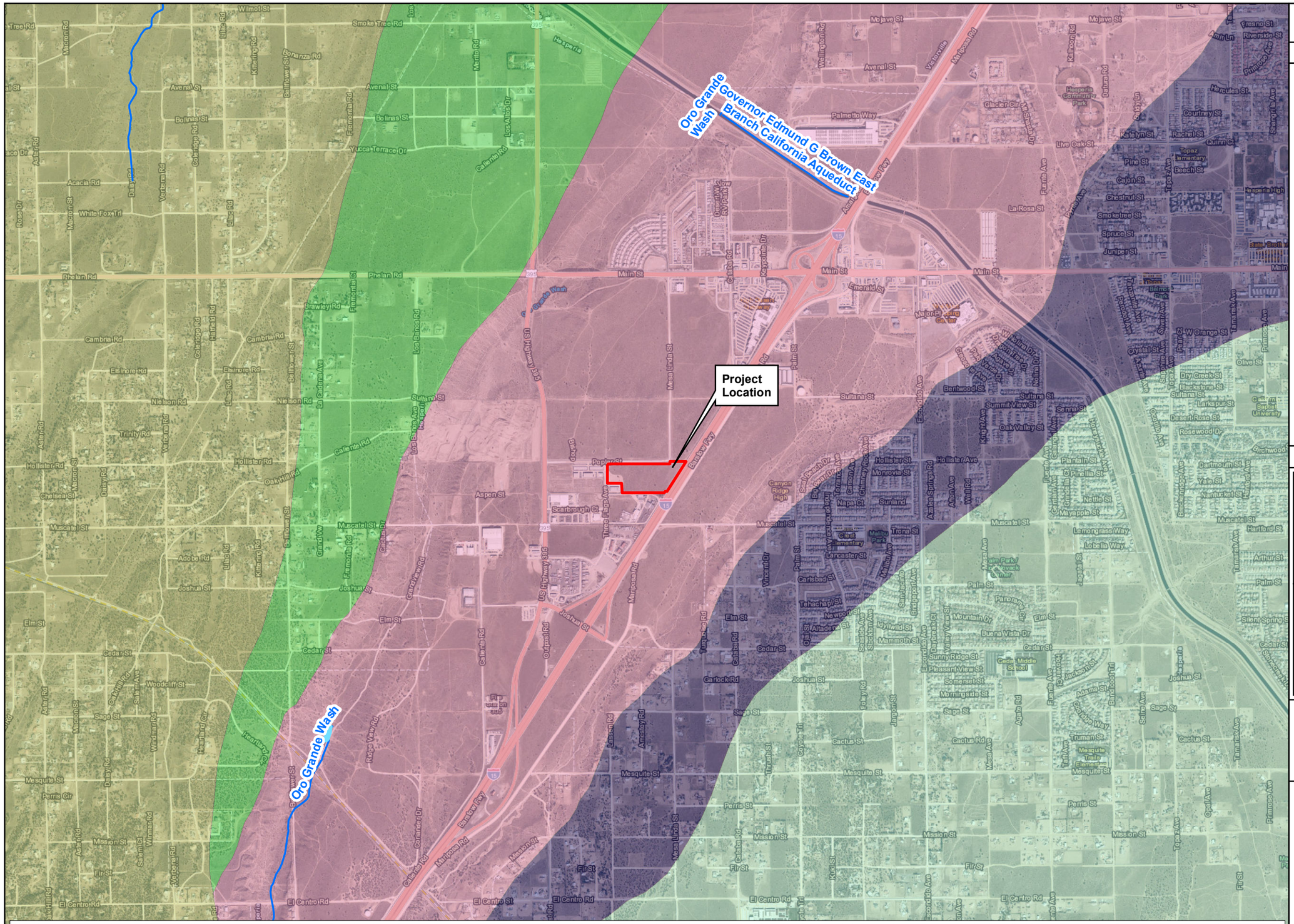
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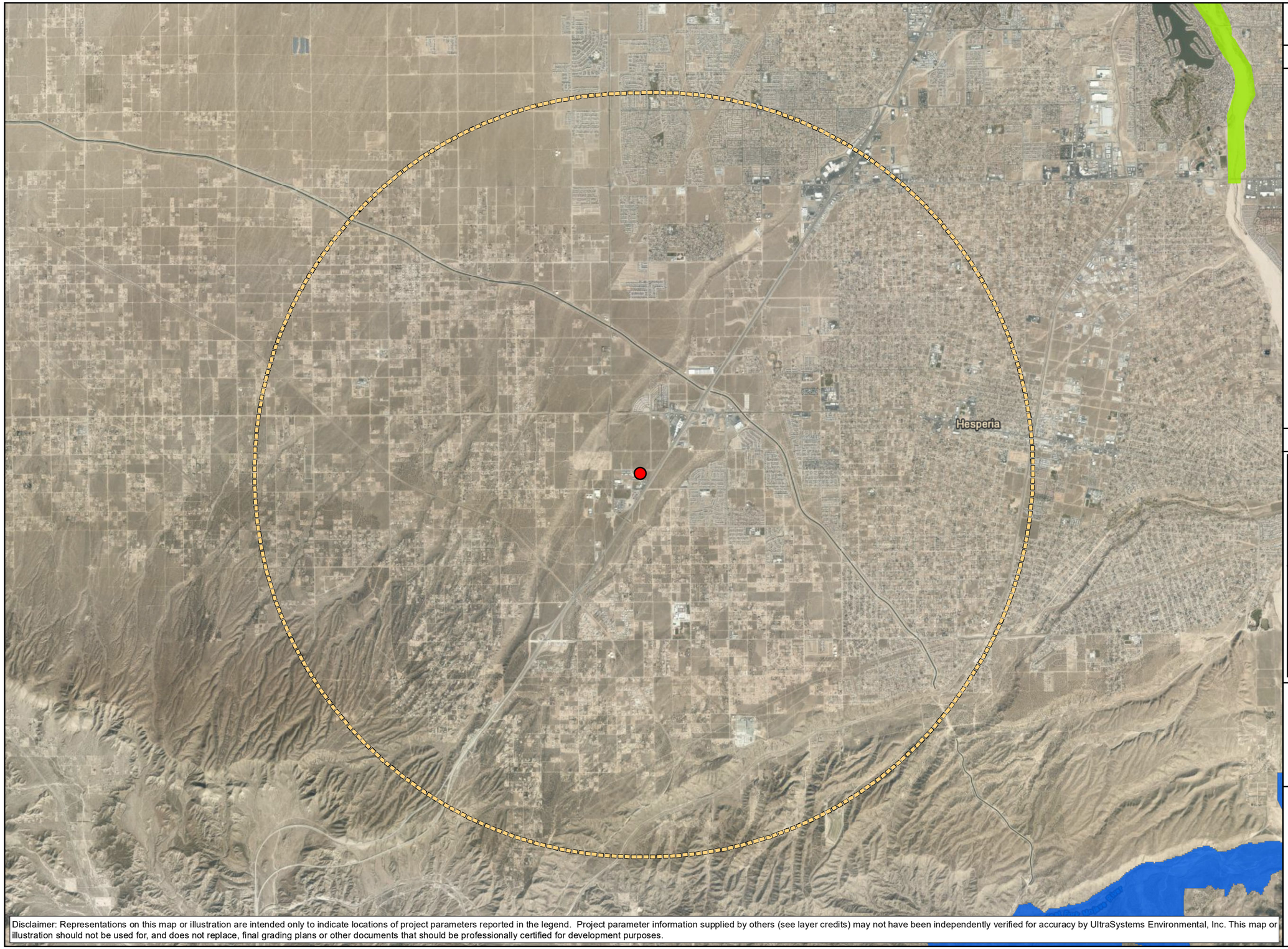
October 14, 2021

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Path: \\GISSVR\gis\Projects\7110_Penske_Truck_Leasing_IS_MND\MXDs\BIO\7110_Penske_4_4_CNDDB_Wildlife_2021_10_07.mxd

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community; CDFW, October 2021; UltraSystems Environmental, Inc., 2021


Oro Grande Wash
Governor Edmund G Brown East Branch California Aqueduct
Project Location
Oro Grande Wash
Hesperia
Main St
Phelan Rd
Sultana St
Palmetto Way
Mojave St
Avenal St
Bolinas St
Yucca Terrace Dr
Smoke Tree Rd
Wilmot St
Cambria Rd
Esmeralda St
Poplar St
Aspen St
Scarbrough Ct
Muscatel St
Joshua St
Elm St
Cedar St
Woodcliff St
Sage St
Cactus St
Mesquite St
Perris St
Mission St
Fir St
El Centro Rd
Hollister Rd
Oak Hill Rd
Nielson Rd
Trinity Rd
Esperanza Rd
Acacia Rd
White Fox Trl
Brawley Rd
Live Oak St
Pine St
Cajon St
Chestnut St
Smoketree St
Spruce St
Juniper St
La Rosa St
Courtney St
Rachel St
Quinn Ct
Katelyn St
Hercules St
Bentwood St
Summit View St
Oak Valley St
Dry Creek St
Blackstone St
Larkspur St
Desert Rose St
Rosewood Dr
Olive St
Pearl St
W Orange St
Crystal St
Plantain St
Pinellia St
Nettie St
Mayapple St
Lemongrass Way
Lobelia Way
Dartmouth St
Yale St
Nantucket St
Harvard St
Arthur St
Lancaster St
Carlsbad St
Tehachapi St
Newport St
Mammoth St
Buena Vista Dr
Sunny Ridge St
Pleasant View St
Somerset St
Morningside St
Monrovia St
Sunland
Napa Ct
Trona St
Malibu Park
Canyon Ridge High
Cedar Middle School
Carter Elementary
Topaz Elementary
Palm Park / Nevack Center
Hesperia Community Park
Hesperia High
Kaiser Permanente Fontana Medical Center
Major PD Facility Center
Fontana Park
Sierra Lakes Golf Course
Desert Willow RV Park
Kingspine Dr
Cherry Ave
Maple Ave
Juniper Ave
Locust Ave
Poplar Ave
Palm Ave
Redwood Ave
Sequoia Ave
Oleander Ave
Almond Ave
Walnut Ave
Citrus Ave
Sycamore Ave
Pepper Ave
Cypress Ave
Elm Ave
Willow Ave
Birch




***Cargo Solutions***
***Truck Warehouse***

**Legend**

Project Location

5-Mile Radius

**USFWS Critical Habitat Name**

Arroyo (=arroyo southwestern) toad

Southwestern willow flycatcher

**Key Map**




0 0.625 1.25 Miles

N

Scale: 1:79,200

0 0.6 1.2 Kilometers

**USFWS Critical Habitats**

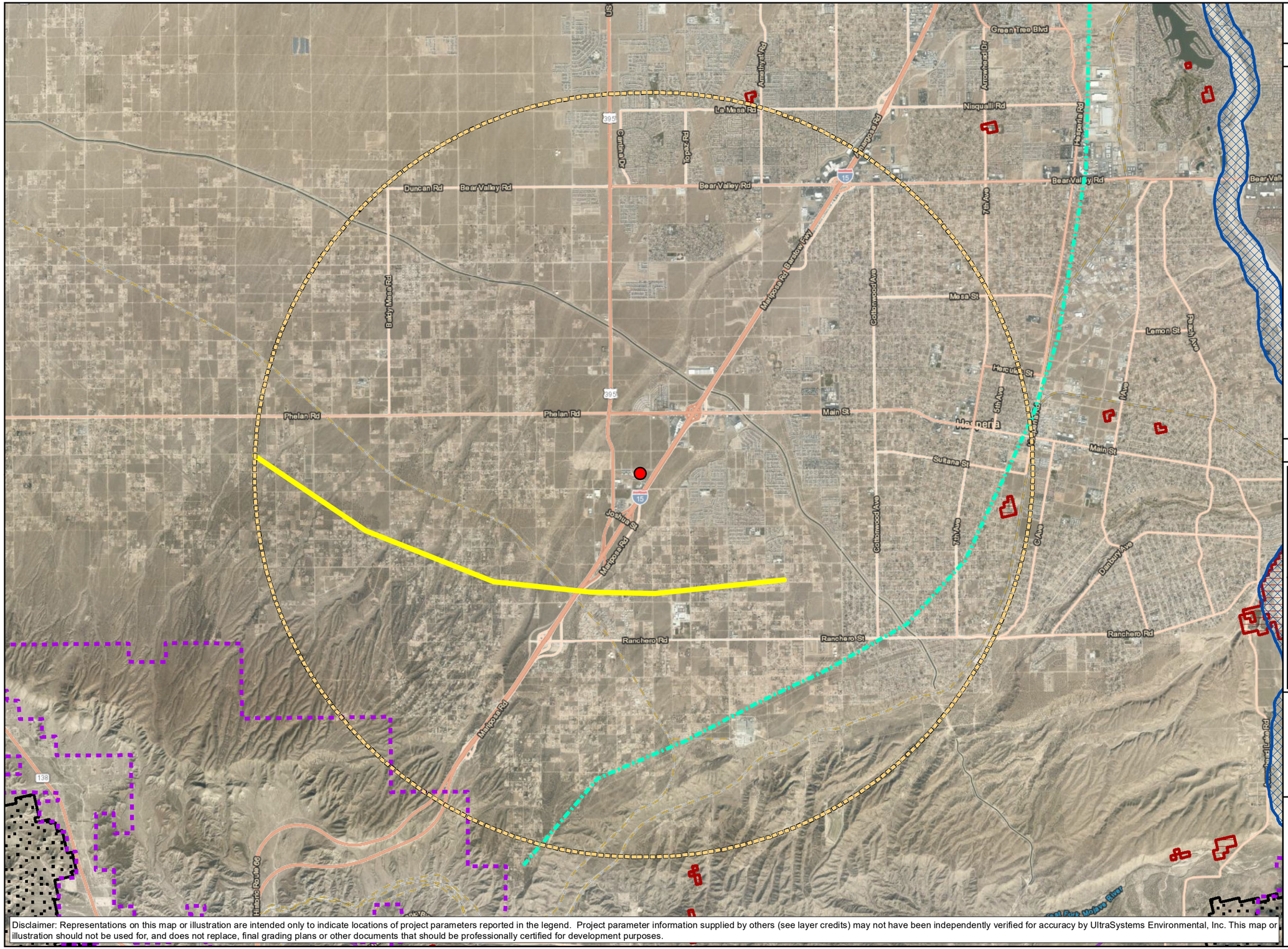
Figure 10

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Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\BIO\7187_Cargo_Warehouse_4_4_CritHab_2022_08_22.mxd
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August 22, 2022




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***Cargo Solutions***
***Truck Warehouse***

## Legend

- Project Location
- 5-Mile Radius
- Natural Landscape Block
- Small Natural Areas
- Potential Riparian Connections

**LINKAGE TYPE, NAME**

- Choke-point, 395 South of Ridgecrest
- Landscape Linkage, Mojave River - Barstow/Camp Cady
- Landscape Linkage, Summit Valley
- Linkage Network of the California Desert

## Key Map




0 0.625 1.25 Miles

0 0.6 1.2 Kilometers

N

Scale: 1:79,200

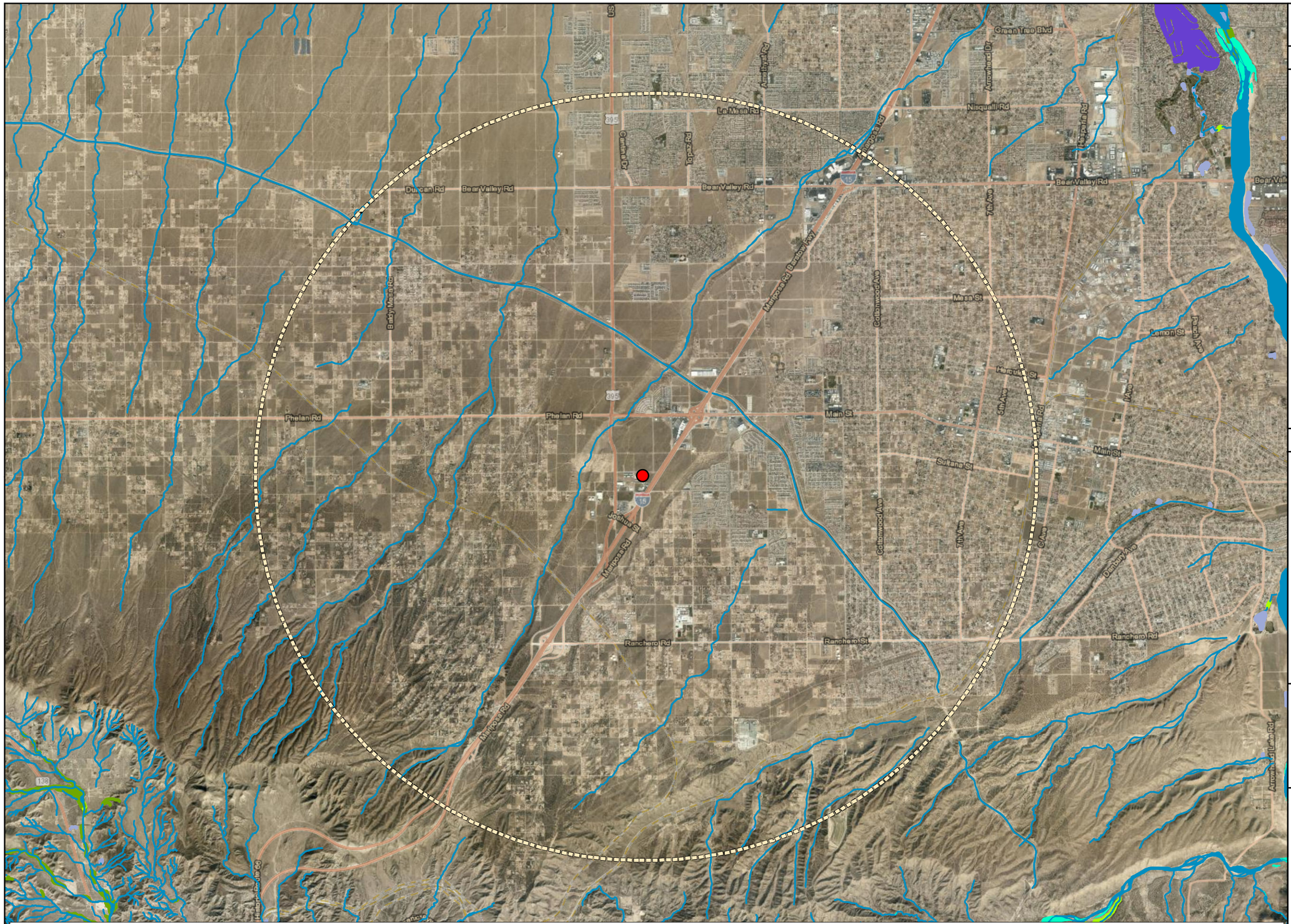
## CDFW Wildlife Corridors

Figure 11

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August 23, 2022

Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\BIO\7187_Cargo_Warehouse_4_4_Wildlife_2022_08_23.mxd
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration; BIOS , 2008-2019; UltraSystems Environmental, Inc., 2022




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***Cargo Solutions***
***Truck Warehouse***

## Legend

- Project Location
- 5-Mile Radius

**Riparian Wetland Type**

- Forested/Shrub Riparian

**USFWS NWI Wetland Type**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

## Key Map




0 0.625 1.25 Miles

0 0.5 1 Kilometers

N

Scale: 1:79,200

**USFWS National Wetlands Inventory (NWI)**

Figure 12

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Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\BIO\7187_Cargo_Warehouse_4_4_NWI_2022_08_23.mxd

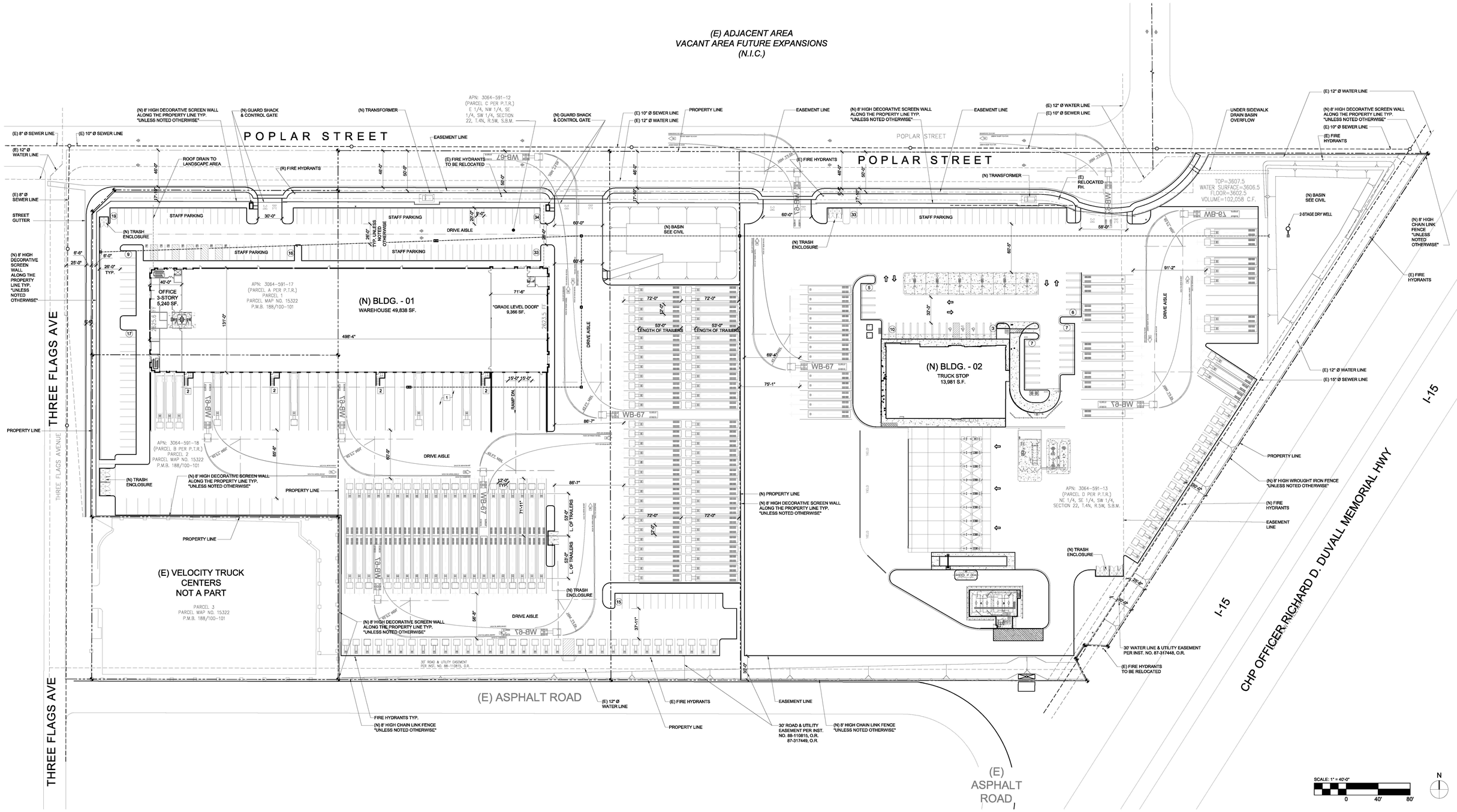
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; USFWS NWI, October 2019; USGS, 2021; UltraSystems Environmental, Inc., 2022

August 23, 2022

# APPENDIX B

**Site Plans**

*(E) ADJACENT AREA*
*VACANT AREA FUTURE EXPANSIONS*
*(N.I.C.)*




## LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

**PARCEL A: (APN: 3064-591-17)**
PARCEL 1 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

**PARCEL B: (APN: 3064-591-18)**
PARCEL 2 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

**PARCEL C: (APN: 3064-591-12)**
THE EAST 1/2 OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

**PARCEL D: (APN: 3064-591-13)**
THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

**PARCEL E: (APN: 3064-631-01)**
THAT PORTION OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND ON FILE IN THE DISTRICT LAND OFFICE, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID SOUTHWEST 1/4; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID SOUTHWEST 1/4 TO A LINE PARALLEL WITH AND DISTANT 14.00 FEET NORTHWESTERLY, MEASURED AT RIGHT ANGLES, FROM THE NORTHEASTERLY PROLONGATION OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED FROM SIMON FRIEDMAN AND WIFE, RECORDED JANUARY 28, 1949, IN BOOK 2353, PAGE 423, OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE NORTHEASTERLY ALONG SAID PARALLEL LINE TO THE NORTHERLY LINE OF SAID SOUTHWEST 1/4; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

## KEY NOTES

1. CONCRETE RAMP W/ 42" HIGH CONCRETE TILT-UP GUARD WALL OR BUILDING WALL ON BOTH SIDED OF RAMP
2. EXTERIOR CONCRETE STAIR

## TOPO KEY NOTES

1. ABUTTERS RIGHT OF INGRESS AND EGRESS TO OR FROM THE STREET OR HIGHWAY ABUTTING SAID LAND HAVE BEEN RELINQUISHED BY A DOCUMENT RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390 AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, BOTH OF OFFICIAL RECORDS.
2. AN EASEMENT FOR ROAD AND UTILITY PURPOSES RECORDED IN BOOK 6070, PAGE 483 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR ROAD AND HIGHWAY PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317448 OF OFFICIAL RECORDS.
4. AN EASEMENT FOR WATER LINE PURPOSES RECORDED SEPTEMBER 10, 1987 AS INST. NO. 87-317449 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR WATER LINE, UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED APRIL 15, 1988 AS INST. NO. 88-110815 OF OFFICIAL RECORDS.
6. AN EASEMENT FOR PIPELINE PURPOSES RECORDED AUGUST 11, 1992 AS INST. NO. 92-333355 OF OFFICIAL RECORDS.
7. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349735 OF OFFICIAL RECORDS.
8. AN IRREVOCABLE OFFER TO DEDICATE AN EASEMENT FOR UTILITY, ROAD AND HIGHWAY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349737 OF OFFICIAL RECORDS.
9. AN EASEMENT FOR ROAD, HIGHWAY AND PUBLIC UTILITY PURPOSES RECORDED AUGUST 21, 1992 AS INST. NO. 92-349738 OF OFFICIAL RECORDS.

## BUILDINGS FLOOR AREA PROPOSED

| | WAREHOUSE | OFFICE | GRADE LEVEL DOOR | TOTAL |
|---|---|---|---|---|
| BUILDING - 01 | 49,838 S.F. / S | 5,240 S.F. / S (5 - STORY=15,720 SF) | 9,366 S.F. / S | 74,924 S.F. |
| BUILDING - 02 | 13,981 S.F. / S | – | – | 13,981 S.F. / S |
| | | | | |

## PARKING SUMMARY

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE (59,204 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. 0.4/1000 FOR AREA AFTER 10,000 | 10,000 S.F. (20 SPACE) 49,204 S.F. (20 SPACE) | 40 | 143 |
| OFFICE | 1 SPACE / 200 S.F. | 15,720 S.F. | 79 | |
| | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | | (119) | |
| **BUILDING - 02** TRUCK STOP (13,981 S.F.) | RETAIL AND OFFICE (GENERAL) SINGLE-USE OR MULTI-TENANT DEVELOPMENTS 1.0 TO 9.9 ACRE SITES 4.00 SPACES/ 1,000 | | 56 | 66 |
| | | | | |
| | ***TOTAL PARKING REQ'D. FOR BLDG. 02*** | | (56) | |
| | | | | |

TOTAL OVERALL PARKING REQUIRED: ***175 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***209 SPACES***
INCLUDING H/C PARKING 9 SPACES

## SITE PLAN LEGEND

- (E) PROPERTY LINE
- (E) CENTER LINE
- (E) EASEMENT LINE
- (E) FENCE
- FIRE HYDRANT LOCATION TO BY FIRE DEPARTMENT
- (E) TREES

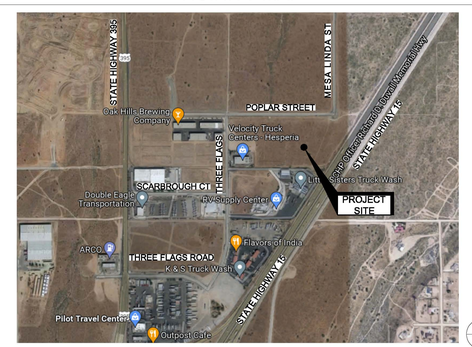
## BUILDING INFORMATION

| | | | |
|---|---|---|---|
| PROJECT DESCRIPTION: | NEW 1 - STORY WAREHOUSE WITH 3 - STORY OFFICE AREA | | |
| OCCUPANCY: | S / B | STORAGE / BUSINESS | |
| CONSTRUCTIONS TYPE: | V-A W/ AUTOMATIC FIRE SPRINKLER SYSTEM | | |
| GROSS FLOOR AREA: | WAREHOUSE | OFFICE | SUB - TOTAL |
| BUILDING - 01 | 59,204 S.F. | 15,240 S.F. | 64,444 S.F. |
| BUILDING - 02 | 13,981 S.F. | | 13,981 S.F. |
| TOTAL LOT GROSS AREA: | 885,234 SQ. FT. / 20.32 ACRES | | |
| WAREHOUSE PROJECT GROSS LOT AREA: | 458,255 SQ. FT / 10.52 ACRES | | |
| TRUCK STOP PROJECT GROSS LOT AREA: | 426,978 SQ. FT / 9.8 ACRES | | |
| BUILDING CODE: | 2019 CALIFORNIA BUILDING CODE (CBC), ELECTRICAL CODE (CEC), MECHANICAL CODE (CMC), PLUMBING CODE (CPC) & 2019 T-24 ENERGY STANDARDS. | | |

**REQUIRED FIRE RESISTIVE CONSTRUCTION:**

1. 1-HR FIRE BARRIER BETWEEN STORAGE AND B OCCUPANCY (DOOR W/60 MINUTE FIRE RATING)

## VICINITY MAP





**CARGO SOLUTION EXPRESS INC.**
14587 VALLEY BOULEVARD
FONTANA, CA 92335
BOBBY KANG
PHONE: 909.263.6902
EMAIL: bobby@cargosolutionexpress.com



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2023-05-05 PLAN CHECK 1ST SUBMITTAL

REVISIONS
1 2022-08-15 PLAN CHECK CORRECTION
2 2022-10-03 PLAN CHECK CORRECTION

# TRUCK WAREHOUSE, TRUCK STOP
# SEC THREE FLAGS & POPLAR
HESPERIA, CA

A2410
2023.03.01


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# APPENDIX C

# Site Photographs




Photo 1: Northwest-facing photo taken from the southeast corner of the project site. Date: August 26, 2022.




Photo 2: Northeast-facing photo taken from the southwest corner of the project site. Date: August 26, 2022.




Photo 3: Southwest-facing photo taken from the northeast corner of the project site. Date: August 26, 2022.




Photo 4: Southeast-facing photo taken from the northwest segment of the project site. Date: August 26, 2022.




Photo 5: California juniper on the project site from a northwest-facing view. Date: August 26, 2022.




Photo 6: Northeast-facing photo of a Joshua tree stand on the project site. Date: August 26, 2022.




Photo 7: Northeast-facing photo of off-site areas within the BSA, taken from the northeast corner of the project site. Date: August 26, 2022.




Photo 8: Southeast-facing photo of off-site areas in the BSA, taken from the southwest corner of the project site. Date: August 26, 2022.

# APPENDIX D

# Soils Report

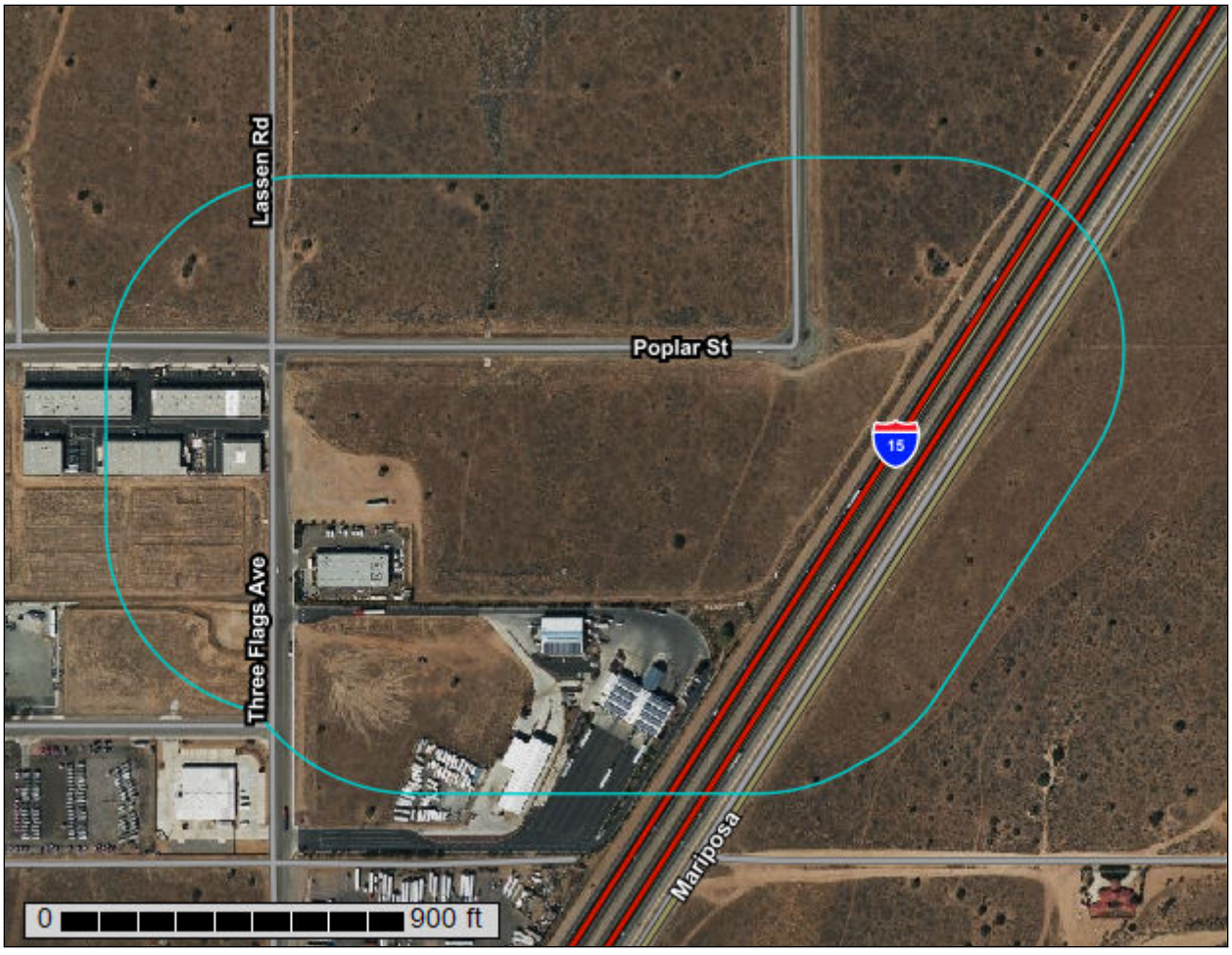
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for San Bernardino County, California, Mojave River Area




August 22, 2022

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

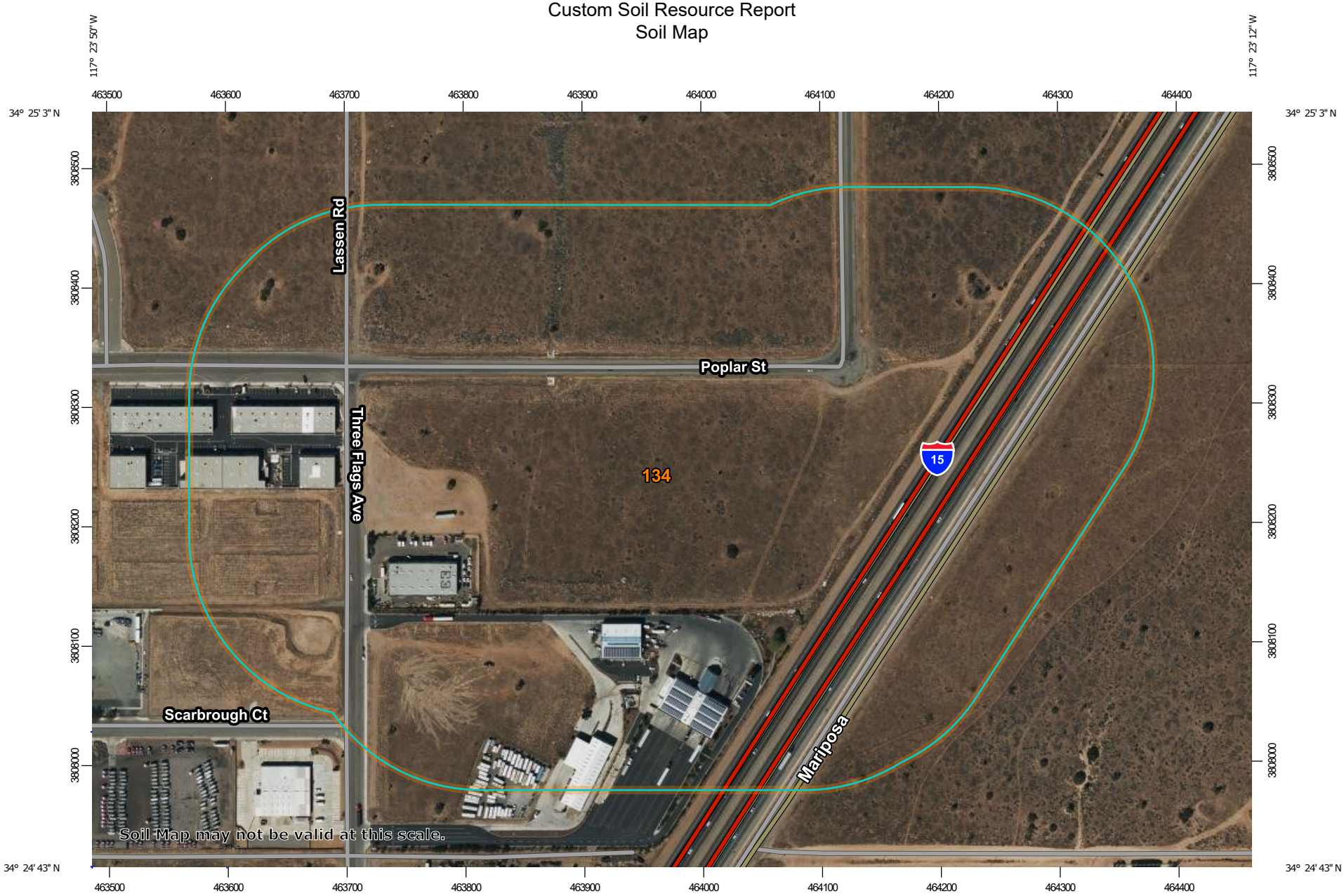
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 85.5 | 100.0% |
| **Totals for Area of Interest** | | **85.5** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# San Bernardino County, California, Mojave River Area

## 134—HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES

### Map Unit Setting

*National map unit symbol:* hks7
*Elevation:* 200 to 4,000 feet
*Mean annual precipitation:* 6 to 9 inches
*Mean annual air temperature:* 57 to 61 degrees F
*Frost-free period:* 150 to 250 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Hesperia and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hesperia

#### Setting

*Landform:* Fan aprons
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from granite sources

#### Typical profile

*H1 - 0 to 6 inches:* loamy fine sand
*H2 - 6 to 60 inches:* sandy loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 10 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 5.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* A
*Ecological site:* R030XE006CA - COARSE LOAMY
*Hydric soil rating:* No

### Minor Components

#### Cajon

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Wrightwood**

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Bull trail**

*Percent of map unit:* 3 percent
*Hydric soil rating:* No

**Unnamed soils**

*Percent of map unit:* 2 percent
*Hydric soil rating:* No

# Soil Information for All Uses

## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

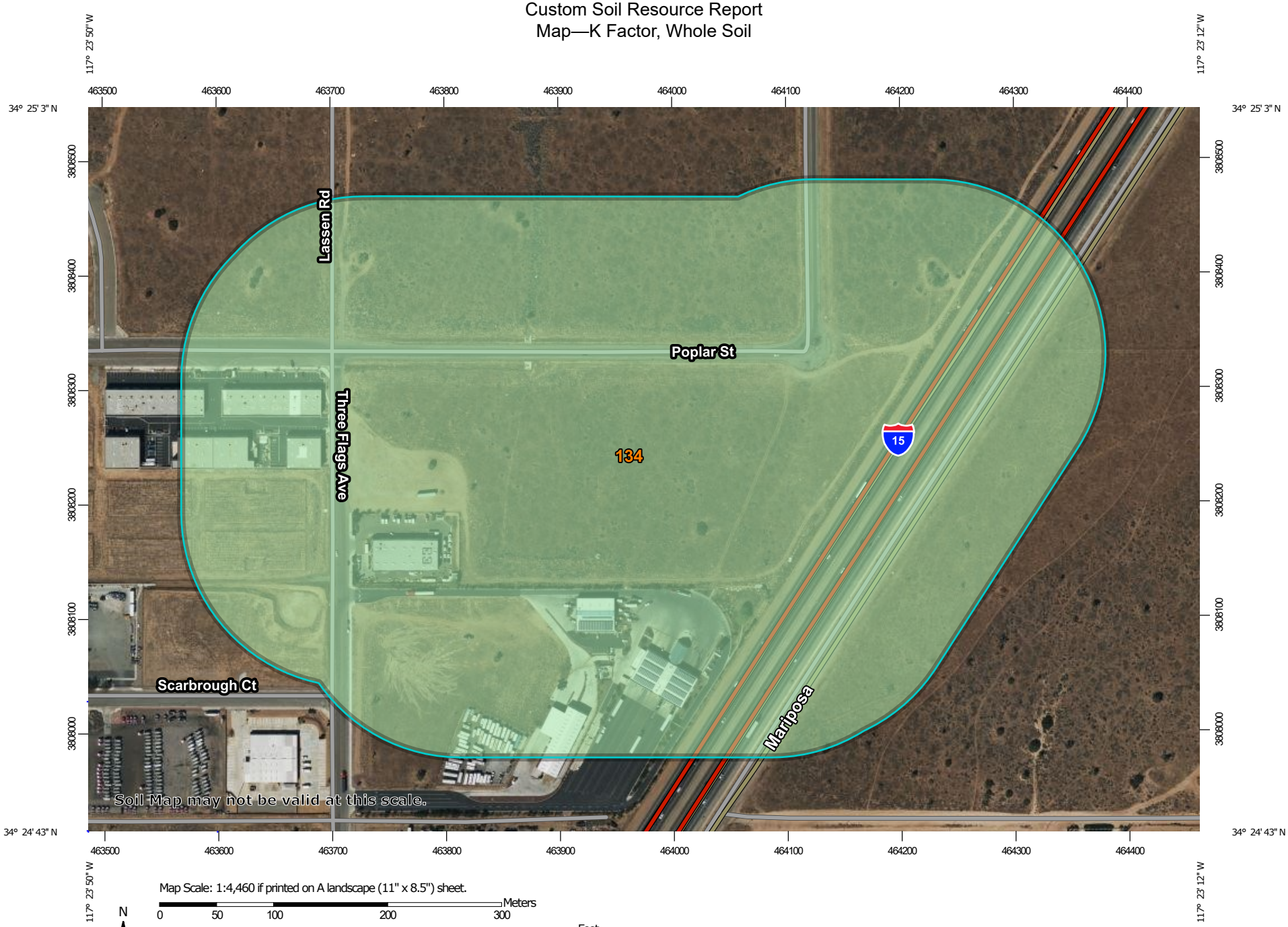
### K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

# Custom Soil Resource Report
## Map—K Factor, Whole Soil




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Lines**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Points**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### Table—K Factor, Whole Soil

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | .28 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

### Rating Options—K Factor, Whole Soil

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

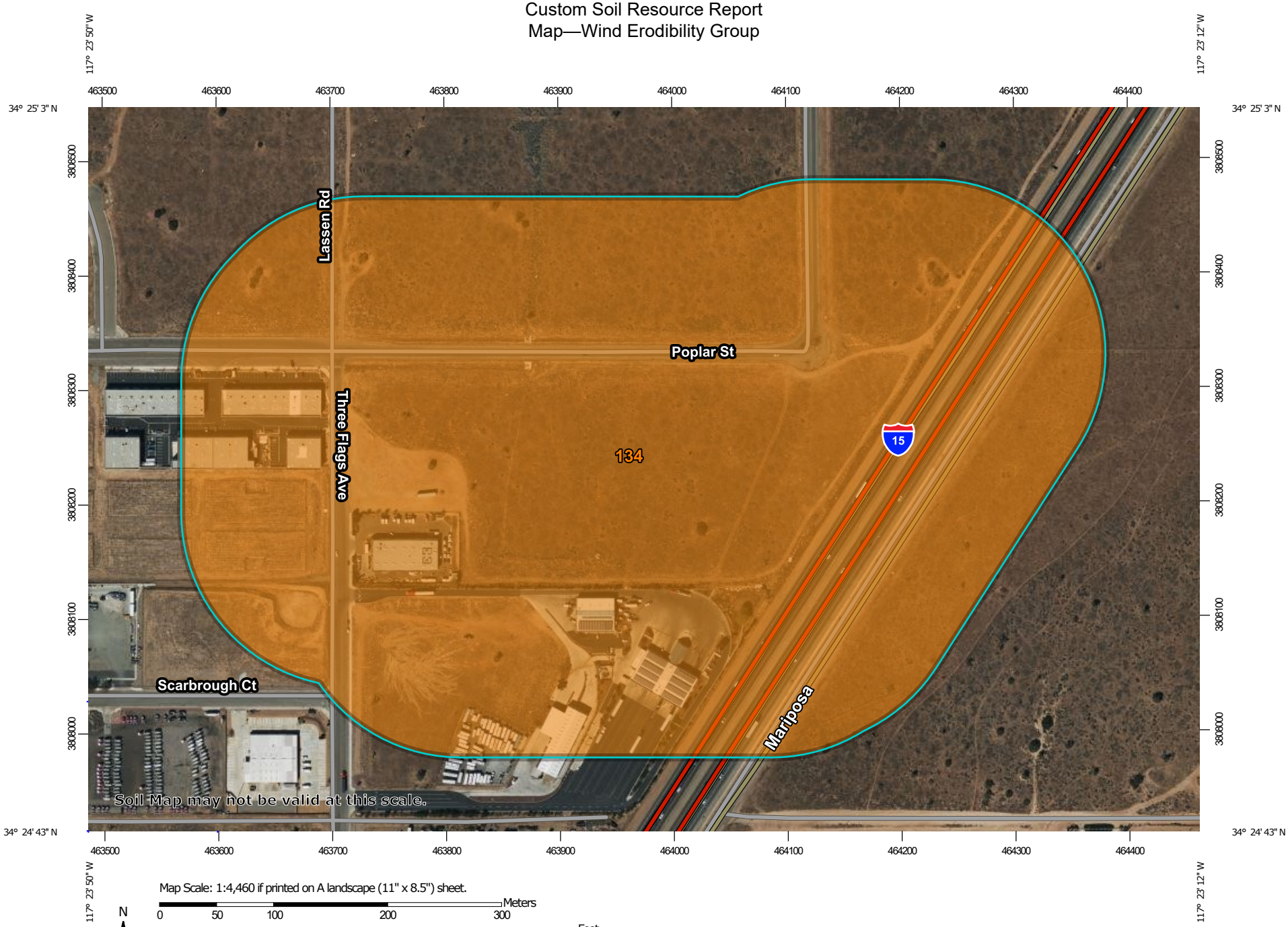
*Tie-break Rule:* Higher

*Layer Options (Horizon Aggregation Method):* All Layers (Weighted Average)

## Wind Erodibility Group

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

# Custom Soil Resource Report
## Map—Wind Erodibility Group




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Soil Rating Lines**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Soil Rating Points**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

| MAP LEGEND | MAP INFORMATION |
| --- | --- |
| | imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. |

### Table—Wind Erodibility Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 2 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

### Rating Options—Wind Erodibility Group

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Lower

# Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

## Plasticity Index

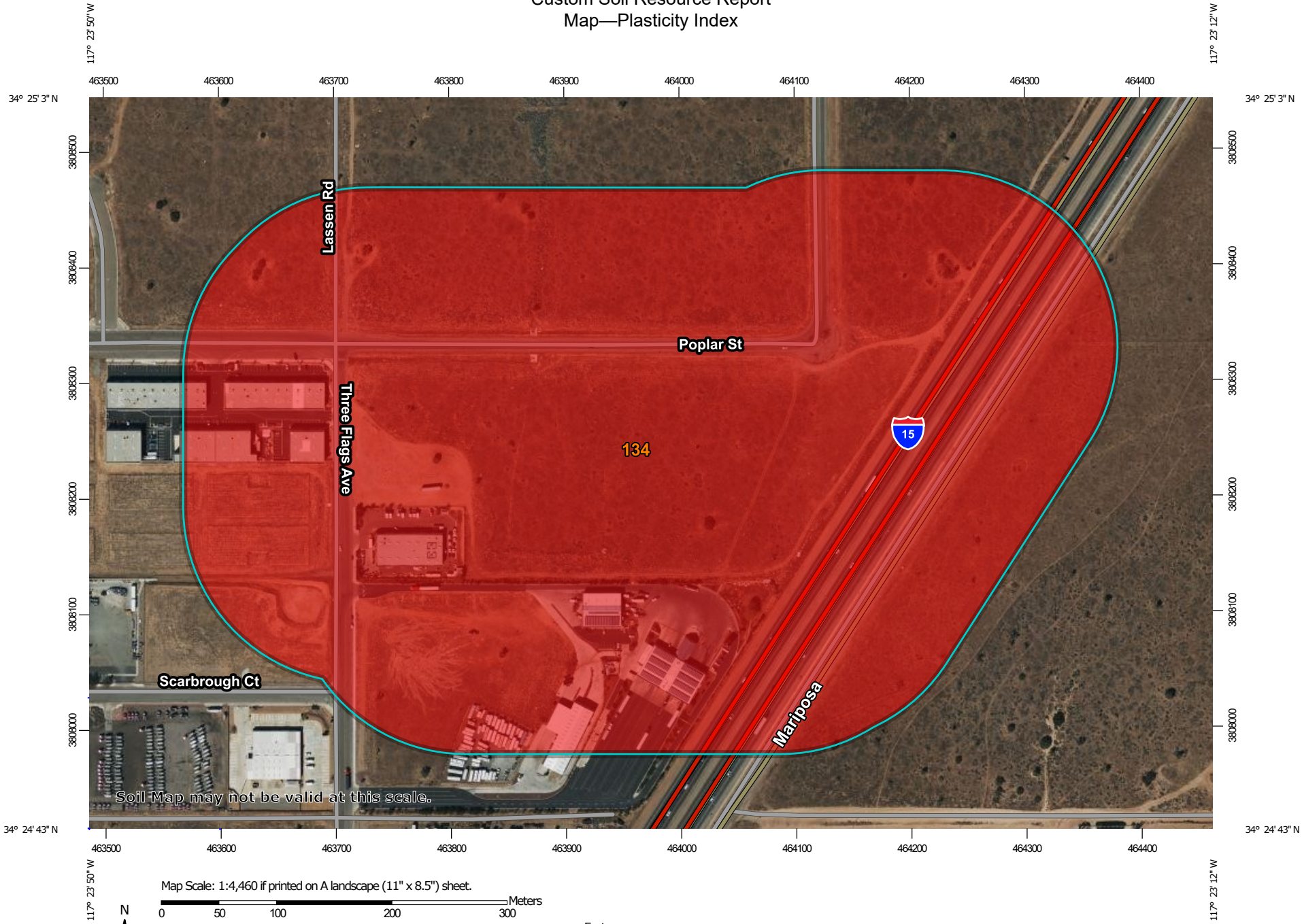
Plasticity index (PI) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid.

The plastic limit is the water content that corresponds to an arbitrary limit between the plastic and semisolid states of a soil. The liquid limit is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state.

Soils that have a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material. Highly and moderately plastic clays have large PI values. Plasticity index is used in classifying soils in the Unified and AASHTO classification systems.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

# Custom Soil Resource Report
## Map—Plasticity Index




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

= 2.3

Not rated or not available

**Soil Rating Lines**

= 2.3

Not rated or not available

**Soil Rating Points**

= 2.3

Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Table—Plasticity Index

| Map unit symbol | Map unit name | Rating (percent) | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 2.3 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

## Rating Options—Plasticity Index

*Units of Measure:* percent

*Aggregation Method:* Dominant Component

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* All Layers (Weighted Average)

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# APPENDIX E

# Plant and Wildlife Species Recorded During the Field Surveys

Table 1 contains the list of vascular plant taxa recorded during the biological field surveys conducted within the BSA. Plant nomenclature and taxonomic order is based on *The Jepson Manual: Vascular Plants of California, s*econd Edition (Baldwin et al., 2012).

## Table 1
## Plant Species Observed during the Field Surveys

| Scientific Name | Common Name |
|---|---|
| ***Asparagaceae*** | **Asparagus Family** |
| *Yucca brevifolia* | western Joshua tree |
| | |
| **Chenopodiaceae** | **Chenopod Family** |
| *Salsola tragus** | Russian thistle |
| | |
| **Cupressaceae** | **Sedge Family** |
| *Juniperus californica* | California juniper |
| | |
| **Poaceae** | **Grass Family** |
| *Bromus rubens** | red brome |
| *non-native | |

Table 2 contains the list of wildlife species observed and/or detected during the biological field surveys conducted within the BSA.

## Table 2
## Wildlife Species Observed/Detected during the Field Surveys

| Scientific Name | Common Name |
|---|---|
| **Birds** | |
| **Columbidae** | **Pigeon/Dove Family** |
| *Columba livia** | rock dove |
| | |
| **Corvidae** | **Corvid Family** |
| *Corvus corax* | common raven |
| | |
| **Falconidae** | **Falcon Family** |
| *Falco sparverius* | American kestrel |
| | |
| **Fringillidae** | **Finch Family** |
| *Haemorhous mexicanus* | house finch |
| **Mammals** | |

| Scientific Name | Common Name |
|---|---|
| **Sciuridae** | **Squirrel Family** |
| *Otospermophilus beecheyi* | California ground squirrel |

# APPENDIX F

# Special-Status Species Inventory and Occurrence Potential Determination

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA | Comment Section |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | | |
| **Listed Endangered, Threatened, Candidate and State Rare Plants: Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | | | | |
| *Yucca brevifolia (=Yucca baccata* var. *brevifolia)* | Joshua tree | SCT | Lifeform: tree<br>Habitats: desert flats, slopes, sagebrush, desert shrub, pinyon-juniper, desert grasslands<br>Soils: silts, loams, and/or sands that are fine, loose, well drained and/or gravelly; alkaline or saline soils<br>Bloom Period: April to May | 1,312 - 6,561 | Yes | Yes | Yes | **Present.** There are six individual Joshua trees on the project site. | |
| **Sensitive Plants: These plants have no official status under the ESA, the CESA, and/or the NPPA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.** | | | | | | | | | |
| *Opuntia basilaris var. brachyclada* | short-joint beavertail | CRPR: 1B.2 | Lifeform: perennial stem succulent<br>Habitats: chaparral, Joshua tree woodlands, Mojavean desert scrub, riparian woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils or coarse granitic, loam, sandy to rocky<br>Bloom Period: April to August | 1,395 – 5,904 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| *Asclepias nyctaginifolia* | Mojave milkweed | CRPR: 2B.1 | Lifeform: perennial herb<br>Habitats: Mojavean desert scrub and pinyon and juniper woodlands<br>Soils: sandy soils, often near washes<br>Bloom Period: May to June | 2,682 - 5,336 | Yes | Yes | Yes | **Low potential to occur.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA | |
| *Loeflingia squarrosa var. artemisiarum* | sagebrush loeflingia | CRPR: 2B.2 | Lifeform: annual herb<br>Habitats: Great Basin sagebrush scrub and Sonoran desert scrub<br>Soils: sandy soils of desert dunes and flats<br>Bloom Period: April to May | 2,296 – 5,297 | Yes | Yes | Yes | **Low potential to occur.** The BSA contains suitable sandy soils to support this species. However, the project area and other undeveloped areas in the BSA are frequently graded and therefore this species only has a low potential to occur. | |
| *Scutellaria bolanderi ssp. austromontana* | southern mountains skullcap (=southern skullcap) | CRPR: 1B.2 | Lifeform: perennial rhizomatous herb<br>Habitats: oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests<br>Soils: gravelly streamside soils<br>Bloom Period: June to August | 1,394 – 6,560 | No | Yes | No | **No potential to occur**. The BSA lacks suitable gravelly streamside soils and suitable habitat such as oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests. | |
| *Eremothera boothii ssp. boothii (=Camissonia boothii ssp. boothii)* | Booth's evening-primrose | CRPR: 2B.3 | Lifeform: annual herb<br>Habitats: Joshua tree woodlands and pinyon and juniper woodlands<br>Bloom Period: April to September | 2,673 – 7,872 | Yes | Yes | Yes | **Low potential to occur**. Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances. | |
| *Canbya candida* | white pygmy-poppy (=pygmy poppy) | CRPR: 4.2 | Lifeform: annual herb<br>Habitats: Mojavean desert scrub, Joshua tree woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils<br>Bloom Period: March to June | 1,968 – 4,789 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Saltugilia latimeri (=Gilia latimeri)* | Latimer's woodlands-gilia | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: chaparral, Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: coarse sandy to rocky soils, often granitic, alluvial soils<br>Bloom Period: March to June | 1,312 – 6,232 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances,. | |
| *Chorizanthe xanti var. leucotheca* | white-bracted spineflower | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: sandy or gravelly substrates<br>Bloom Period: April to June | 984 – 3,936 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| **Legend and Notes** | | | | | | | | | |

***California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes:*** *tth* e CESA and NPPA are administered by CDFW. The official listing of Plants of California Declared to Be Endangered, Threatened or Rare is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.

- **SCT = state candidate for listing as threatened**: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).

***California Rare Plant Ranks*** (Formerly known as CNPS Lists): the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

- **CRPR 1B** = California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

***California Native Plant Society (CNPS) Threat Ranks:*** The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

- **.2** = moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

***Other:***

- **ND** = no designation
- **Annual**: grows from seed and reproduce within a single year.
- **Perennial:** lives more than one year.
- **Deciduous:** plants shed their leaves for part of the year.
- **Evergreen:** plants retain their leaves for an entire year.
- **Mesic habitat:** a habitat with a moderate or well-balanced supply of moisture.
- **Hemiparasitic:** plants that are connected to host plants and derive energy, water, and minerals from them, but also maintain their own functional root systems or photosynthetic surfaces.
- **Parasitic:** plants that are connected to host plants and rely solely on them for energy, water, and nutritional requirements.
- **Carnivorous**: plants that trap insects and other small animals and derive nourishment from them.
- **Herbs**: plants that are herbaceous and lack above-ground woody tissue.
  - **Bulbiferous herb:** plants that have fleshy underground storage organs typically derived from scale leaves (this category includes cormiferous and other similar plants in which storage organs have other origins).
  - **Rhizomatous herb:** plants that have underground stems (rhizomes), typically bearing shoots which develop into new plants.
  - **Stoloniferous herb:** plants that have above-ground runners (stolons) which typically root and produce new plants.
- **Shrubs:** smaller woody perennials that retain most of their above-ground woody tissue and are typically many-stemmed.
  - **Leaf succulents**: succulents with thick, fleshy leaves.
  - **Stem succulents**: succulents with thick, fleshy stems and reduced or absent leaves.
- **Trees:** larger woody perennials that retain all of their above-ground wood tissue and are typically single-stemmed.
- **Vines:** twining woody perennials requiring external support for growth.
- **Mosses:** small green plants (one of three groups of bryophytes) with structures that resemble miniature leaves and stems. The leaves generally have a midrib called a costa. The sporophyte (the spore-bearing structure) is persistent for weeks.
- **Liverworts:** small green plants (one of three groups of bryophytes). There are both leafy and thalloid types - leafy liverworts lack a midrib on the leaves, while thalloid liverworts have no leaves. The sporophyte is short-lived

***Notes:***

The BSA contains approximate elevations of 3,606 to 3,620 feet above mean sea level (amsl).
Yes = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.
No = the BSA is located outside the plant species' known distribution, elevation range, and/or the BSA lacks suitable habitats and/or soils to support the plant species. It is highly unlikely for the plant species to have a potential to occur within the BSA. No further evaluation is needed.
Present = observed within the BSA during surveys.
A CNPS elevation range is provided for each taxon in feet. The stated range is for the California portion of a plant's range only (if the taxon also occurs outside the state). These CNPS elevation range data are accumulated from literature, herbarium specimens, and field survey information.

***Resources***

- *The Jepson Desert Manual (Baldwin et al., 2002);*
- *The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al., 2012);*
- *BLM Special Status Plants under the jurisdiction of the California State Office as of October 30, 2013 (BLM, 2013);*
- *The Final Environmental Impact Report and Statement (Final EIR/S) for the West Mojave Plan (BLM, 2005);*
- *Final Environmental Impact Statement. Proposed Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) (BLM and CDFG, 2002);*
- *(Calflora website );*
- *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
- *CNDDB ;*
- *Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2016);*
- *State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW, 2016);*
- *(CNPS website );*
- *(eFloras.org website );*
- *(NatureServe Explorer website );*
- *Rare Plants of San Diego County (Reiser, 2001);*
- *USDA Forest Service, Pacific Southwest Region, Sensitive Plant Species List by Forest (USFS, 2013).*
- *UltraSystems in-house records.*

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: Located Within Species' Distribution and/or Elevation Range (if known) | The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Listed Invertebrates** | | | | | | |
| *Rhaphiomidas terminatus abdominalis* | Delhi sands flower-loving fly | FE | Habitats: sparsely vegetated area, providing sparse ground cover (10-20%)<br>Soils: unique, fine, sandy soils | Yes | No | **No potential to occur**. The BSA does not contain suitable soil (Delhi sands) or vegetation habitats to support this species. |
| *Euphydryas editha quino (=Euphydryas editha wrighti)* | quino checkerspot butterfly | FE | Habitats: grasslands, remnant forbland, open coastal sage scrub, open chamise chaparral, open red shank chaparral, juniper woodland, and semi-desert scrub, open or sparsely vegetated rounded hilltops, ridgelines, rocky outcrops of chaparral and coastal sage scrub<br>Soils: loamy soils with moderate to high amounts of clay<br>Characteristics: adult butterflies will only deposit eggs on species they recognize as host plants | Yes | No | **Low potential to occur.** The BSA contains some desert scrub habitat, however it exists in a disturbed state. In addition, the soils in the BSA do not contain a high clay faction; this species typically occurs in areas with clay-loam soils. The soils of the BSA are primarily loamy-fine-sand. |
| *Bombus crotchii* | Crotch bumble bee | candidate endangered | Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats: This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Listed Fish** | | | | | | |
| *Siphateles bicolor mohavensis (=Siphateles mohavensis, =Gila bicolor mohavensis)* | Mojave tui chub | FE, SE, fully protected | Habitats: weedy, near-shore areas of lakes, in the shallow areas of streams flowing out of lakes, and in mineral springs<br>Characteristics: needs vegetation for spawning | Yes | No | **No potential to occur**. There is no suitable habitat (wetlands) in the BSA that would support populations of the species. . |
| **Listed Amphibians** | | | | | | |
| *Anaxyrus californicus (=Bufo californicus)* | arroyo toad | FE, SSC | Habitats: sandy riverbanks, streams, washes, and arroyos, breeds in and near streams<br>Characteristics: nearby sandy terraces, dampened in places by capillary action, and with some scattered vegetation providing surface sheltering and burrowing sites and foraging areas | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Rana draytonii (=Rana aurora draytonii)* | California red-legged frog | FT, SSC | Habitats: lowland streams, wetlands and marshes, lakes, riparian woodlands, ponds, reservoirs, and other sources of permanent water<br>Characteristics: require cold water pond habitats with emergent and submergent vegetation | No | No | **Not expected to occur.** The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| *Rana muscosa* | southern mountain yellow-legged frog | FE, SE, CDFW:WL | Habitats: sunny riverbanks, meadow streams, isolated pools, lake borders, and rocky stream courses in the mountains of Southern California<br>Characteristics: prefer open stream and lake margins that gently slope | No | No | **Not expected to occur**. The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| **Listed Reptiles** | | | | | | |
| *Gopherus agassizii* | desert tortoise (=Mohave desert tortoise) | FT, ST | Habitats: desert scrub, creosote bush scrub, Mojave-saltscale scrub, desert wash, Joshua tree habitats and flat desert having sandy or gravelly soil, but occurs in almost every desert habitat except on the most precipitous slopes<br>Characteristics: avoid plateaus, playas, sand dunes, steep slopes and areas with many obstacles to free movement | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Charina umbratica* | southern rubber boa | ST | Habitats: moist oak-conifer and mixed-conifer coniferous forests and woodland habitats, large grassy fields or other open areas<br>Characteristics: require loose, moist soil for burrowing, rock outcrops serve as hibernacula | No | No | **No potential to occur.** The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species |
| **Listed Birds** | | | | | | |
| *Gymnogyps californianus* | California condor | FE, SE, fully protected | Habitats: semi-arid, pine or chaparral covered rugged mountain ranges, higher elevations, foraging habitat lies in foothills predominately covered by grasslands or oak-savannah habitats<br>Characteristics: habitat requirements may be adequate food supplies, open-enough habitat that food can be readily found and accessed | Yes | No | **No potential to occur.** The BSA does not contain adequate open habitat to support this species. In addition, suitable breeding habitats are absent from the BSA. This species is rarely detected in urbanized areas, and while the BSA and its surrounding vicniity contain some open space, this species is most likely to utilize the habitat provided by the San Bernardino and Angeles National Forests in the region rather than areas that have undergone some disturbance such as the BSA. |
| *Haliaeetus leucocephalus* | bald eagle | SE, fully protected, BCC, Season of Concern: nesting & wintering | Habitats: seacoasts, rivers, wetlands swamps, and large lakes, in winter in dense, sheltered, remote conifer stands<br>Characteristics: large nests are normally built in the upper canopy of large trees, usually conifers | Yes | No | **No potential to occur.** The BSA does not contain adequate large bodies of water, or free flowing rivers with abundant fish for foraging. In addition, suitable perching sites, roosting sites, and breeding habitats are absent from the BSA. Any occurrence would mostly likely be restricted to passage. |
| *Buteo swainsoni* | Swainson's hawk | ST, BCC | Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands<br>Characteristics: nest in juniper trees of juniper-sage flats not near riparian zones | Yes | Yes | **Low potential to occur.** The BSA is located within the historical breeding range of the species, but breeding populations are likely extirpated from the region. The BSA supports marginal foraging and there is low potential for migrating or transient individuals to forage in the BSA. There is no potential for the species to nest within the BSA. |
| *Coccyzus americanus occidentalis* | western yellow-billed cuckoo | FT, SE,, BCC, | Habitats: relatively dense growths of trees and shrubs in riparian habitats that lines rivers and streams<br>Characteristics: Cuckoos have large home ranges, often exceeding 50 acres, and sometimes approaching 100 acres | Yes | No | **No potential to occur**. The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. Due to these factors, there is no potential for occurrence of this species. |
| *Empidonax traillii extimus* | southwestern willow flycatcher | FE, SE, Season of Concern: nesting | Habitats: dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes, surface water, saturated soil, or herbaceous wetland plants present during the early summer months; woody riparian vegetation is present | Yes | No | **Not expected to occur.** The BSA does not contain habitat (riparian thickets) needed to support populations of the species. |
| *Vireo bellii pusillus* | least Bell's vireo | FE, SE, Season of Concern: nesting | Habitats: dry, intermittent streams, on the desert slopes mesquite (Prosopis sp.) and sandbar willow in canyon locations, willow-dominated riverine riparian habitats with well-developed overstories, understories, and low densities of aquatic and herbaceous cover | Yes | No | **No potential to occur.** The BSA does not contain suitable breeding and foraging riparian and aquatic habitats to support this species. Furthermore, the BSA lacks riparian habitat with well-developed understories and overstories. |
| **Listed Mammals** | | | | | | |
| *Xerospermophilus mohavensis (=Spermophilus mohavensis)* | Mohave ground squirrel | ST | Habitats: arid Mohave Desert of California<br>Soil: saltbush scrub, alkali desert scrub, desert scrub, creosote bush scrub | Yes | No | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Sensitive Wildlife: These animals have no official status under the ESA and/or the CESA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations** | | | | | | |
| **Sensitive Invertebrates** | | | | | | |
| *Helminthoglypta taylori* | westfork shoulderband | Special Animals List | Habitat: talus and rock piles on mountain slopes<br>Characteristics: narrow endemic terrestrial snail from the desert foothills of the San Bernardino Mountains | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Plebulina emigdionis* | San Emigdio blue butterfly | Special Animals List | Habitats: arid washes, dry riverbeds, and intermittent streamsides as well as adjacent flats in lower Sonoran zone<br>Characteristics: flight time is from March through September. Hosts for caterpillars include Shadscale (*Atriplex canescens* ) | Yes | Yes | **Not expected to occur.** The BSA is in the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There is no shadscale scrub in the BSA. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Danaus plexippus* pop. 1 | monarch butterfly | FC: California overwintering population | Habitats: wind-protected tree groves (eucalyptus [Eucalyptus sp.], Monterey pine [Pinus radiata], cypress), with nectar and water sources nearby | Yes | No | **No potential to occur.** The BSA offers geerally poor wind protection. |
| **Sensitive Reptiles** | | | | | | |
| *Actinemys marmorata (=Actinemys marmorata marmorata) (=Emys marmorata)* | northern western pond turtle (=northern western pond turtle) | SSC | Habitats: stagnant or slow-moving water in aquatic habitats, ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Actinemys pallida (=Actinemys marmorata pallida)* | southern western pond turtle | SSC, BLMS, USFS: S, WRCMSHCP: Covered | Habitats: intermittent streams, small ponds, small lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and sewage treatment lagoons | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Phrynosoma blainvilli (=Phrynosoma coronatum) (=Phrynosoma coronatum blainvillei)* | Blainville's horned lizard (=coast horned lizard) (=San Diego horned lizard) | SSC | Habitats: wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest, habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Thamnophis hammondii* | two-striped garter snake | SSC | Habitats: aquatic and it is rarely found far from water, permanent or semi-permanent bodies of freshwater and adjacent riparian habitat, oak woodlands, chaparral and coniferous forests on the coastal slopes of mountains and foothills to sea level | No | No | **Not expected to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| **Sensitive Birds** | | | | | | |
| *Circus hudsonius (=Circus cyaneus)* | northern harrier | SSC | Habitats: northern harriers breed and forage in a variety of open (treeless) habitats, open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks | Yes | No | **Not expected to occur.** The BSA does not contain suitable foraging and breeding habitats to support this species such as , open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks. |
| *Accipiter cooperii* | Cooper's hawk | WL, Season of Concern: nesting | Habitats: broken woodland and habitat edges<br>Characteristics: tolerant of human activities near the nest and is seen more often nesting in urban/residential areas | Yes | Yes | **Low potential to occur**. This species has adapted to disturbed environments and human activity. There is marginal foraging habitat and low potential for this species to forage in the BSA. Due to a lack of suitable nesting habitat (trees) there is no potential for the species to nest in the BSA. |
| *Aquila chrysaetos* | golden eagle | fully protected, WL, BCC, Season of Concern: nesting and wintering | Habitats: mountainous canyon land, rimrock terrain of open desert and grassland areas, open rolling foothills of grasslands, oak savannas, oak and juniper woodlands, chaparral, mountain areas, and desert, open habitats including grasslands, deserts, savannahs, and shrublands<br>Characteristics: hilly or mountainous country, deeply cut canyons rising to open mountain slopes and crags are ideal habitat | Yes | Yes | **Not expected to occur.** This species is characteristic of remote, open areas and avoids human developments and activities. There is no suitable nesting or foraging habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Athene cunicularia* | burrowing owl | SSC, BCC, Season of Concern: burrowing sites and some wintering sites | Habitats: open, dry, flat ground or low rolling hills with sparse vegetation and available burrows<br>Characteristics: dig their own burrows in the soft banks of irrigation canals and ditches | Yes | Yes | **High potential to occur.** The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of human disturbances. Due to these factors, there is high potential for the species to occur in the BSA. |
| *Strix occidentalis occidentalis* | California spotted owl | SSC, BCC | Habitats: forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies (>70% canopy closure), multiple canopy layers, and downed woody debris<br>Characteristics: low elevations, it uses coastal oak woodland, valley foothill riparian, and redwood (Sequoia sempervirens) forests | Yes | No | **Not expected to occur.** The BSA does not contain suitable oak/conifer woodland or montane forest breeding, roosting, or foraging habitats to support this species. |
| *Asio otus* | long-eared owl | SSC Season of Concern: nesting | Habitats: conifer, oak, riparian, pinyon-juniper, and desert woodlands<br>Characteristics: long-eared owl appears to be more associated with forest edge habitat | Yes | Yes | **Not expected to occur.** There is no suitable foraging, roosting, or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Falco mexicanus* | prairie falcon | WL, BCC, Season of Concern: nesting | Habitats: annual grasslands to alpine meadows on open, dry, level or hilly terrain, perennial grasslands, savannahs, rangeland, some agricultural fields, desert scrub areas and even marshland and ocean shores<br>Characteristics: during the winter- reside in cultivated fields, lakeshores, desert scrub | Yes | Yes | **Low potential to occur.** The BSA does not contain suitable nesting habitat (rocky cliffs), and there is no potential for this species to nest in the BSA. There is marginal foraging habitat in the BSA, and there is low potential for this species to occur in the BSA as a forager., |
| *Lanius ludovicianus* | loggerhead shrike | SSC, BCC, Season of Concern: nesting | Habitats: agricultural fields, pastures with fence rows, old orchards, savannas, prairies mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs<br>Characteristics: nest in isolated trees or large shrubs | Yes | Yes | **Moderate potential to occur.** The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. |
| *Vireo vicinior* | gray vireo | SSC, BCC | Habitats: arid, shrub-covered slopes in pinyon-juniper, juniper, and chamise-redshank chaparral habitats on foothills and mesas<br>Characteristics: they forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 feet above ground | Yes | Yes | **Not expected to occur.**The BSA is outside of the known breeding range of the species and does not support habitat (dense, shrubby vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Toxostoma lecontei* | Le Conte's thrasher | SSC, BCC | Habitats: open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub, Joshua tree habitats with scattered shrubs, open desert flats, washes and alluvial fans with sandy and/or alkaline soil<br>Characteristics: usually does not occur in areas of monotypic creosote bush scrub | Yes | Yes | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| *Setophaga petechia (=Dendroica petechia)* | yellow warbler | SSC, BCC, Season of Concern: nesting | Habitats: deciduous trees of the riparian woodland from coastal desert woodlands to the Sierra Nevada – willows (Salix sp.), cottonwoods (Populus sp.), aspens (Populus sp.), California sycamores (Platanus racemosa), and alders (Alnus sp.)<br>Characteristics: nests are deep cups, placed in an upright fork in a deciduous sapling or shrub, typically 2 to 16 feet high | Yes | No | **Not expected to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (riparian vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Icteria virens* | yellow-breasted chat | SSC, Season of Concern: nesting | Habitats: dense riparian thickets of willows, vines, and brush associated with streams and other wetland habitats<br>Characteristics: nest is an open cup placed in dense shrubs or thickets within 3 to 8 feet above ground along a stream or river | Yes | No | **No potential to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (dense riparian thickets) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Piranga rubra* | summer tanager | SSC, Season of Concern: nesting | Habitats: desert riparian habitat, mature, dense, desert riparian habitat dominated by cottonwoods (Populus sp.) and willows (Salix sp.) along streams and rivers | Yes | | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA.. |
| **Sensitive Mammals** | | | | | | |
| *Chaetodipus fallax pallidus* | pallid San Diego pocket mouse | SSC | Habitats: sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California<br>Characteristics: mainly in arid coastal and desert border areas | Yes | No | **Not expected to occur**. The BSA is in of the known distributional range of the species and contains sandy soils, but the soils there have been subjected to repeated surface disturbances. There is a lack of natural vegetation and rocky or gravelly inclusions in the soil that is preferred by this species. Due to these factors, there is no potential for the species to occur in the BSA |
| *Microtus californicus mohavensis* | Mohave river vole | SSC | Habitat: grassy or riparian habitats within the Mojave River corridor<br>Characteristics: inhabits areas of infrequent flooding | Yes | No | **Not expected to occur.** The BSA does not support habitat (riparian) needed to support populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA |
| *Lasiurus cinereus* | hoary bat | ND | Habitats: near open grassy areas in coniferous and deciduous forest or near lakes, open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding<br>Characteristics: winter roosts include sides of buildings and tree trunks | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA.. |
| *Vulpes macrotis arsipus* | desert kit fox | Protected by Section 460 of the California Code of Regulations [CCR], Title 14 | Habitats: sparsely vegetated scrub habitats and native or annual grasslands, alkali sink scrub, saltbush scrub, and chenopod scrub, although oak woodlands, vernal pools, alkali meadows and playas also provide habitat<br>Characteristics: located on gradual west to northwest facing slopes, with characteristically deep, light-textured and virtually stoneless soils | Yes | No | **Low potential to occur**. The BSA contains low-quality foraging habitat for this fox, however occurrence of this species in the BSA would likely be restricted to passage and/or occasional foraging. There is a lack of suitable, undisturbed breeding habitat for this species as the BSA frequently experiences various disturbaces including human activity, vehicle traffic, and soil compaction, |
| *Taxidea taxus* | American badger | SSC | Habitats: alpine meadows to elevations as low as Death Valley<br>Characteristics: requirements - sufficient food, friable soils, and relatively open, uncultivated ground | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |

***Legend and Notes***

***Federal Endangered Species Act (ESA) Listing Codes: the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.***

- **FE** = federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT** = federally listed as threatened: any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FC** = federal candidate for listing: candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them for listing as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by higher priority listing actions to address species in greater need. A proposed regulation has not yet been published in the Federal Register for these species.
- **FPE** = federally proposed for listing as endangered: a candidate species that has been proposed by USFWS or NMFS for listing as endangered and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPT** = federally proposed for listing as threatened: a candidate species that has been proposed by USFWS or NMFS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPD** = federally proposed for delisting: a species that has been proposed by USFWS or NMFS for delisting (or down listing from endangered to threatened) and the proposed rule to delist has been published in the Federal Register.

***California Endangered Species Act (CESA) Listing Codes: the CESA is administered by CDFW. The official listing of Animals of California Declared To Be Endangered or Threatened is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.***

- **SE =** state-listed as endangered: "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).
- **ST** = state-listed as threatened: "threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts (Fish and Game Code § 2067).
- **SCE** = state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCT** = state candidate for listing as threatened: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed by publication in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCD** = state candidate for delisting: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for removal from either the list of endangered species or the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to remove the species to either list.

***California Department of Fish and Wildlife (CDFW) Designations:***

For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering

- **SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- **Fully protected:** fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).
- **WL = watch list**: this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.
- **Special Animals List**: The Special Animals List contains taxa that are actively inventoried, tracked, and mapped by the CNDDB, as well as taxa for which mapped data may not yet be incorporated into CNDDB user products

***United States Fish and Wildlife Service (USFWS) Designations:***

- **FSC = federal species of concern**: federal species of concern is an informal term. It is not defined in the ESA. The term commonly refers to species that are declining or appear to be in need of conservation.
- **BCC = bird of conservation concern**: a bird of conservation concern is listed in the USFWS' 2008 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |

***Western Bat Working Group (WBWG) Designations:***
The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America.
•**H = High Priority:** These species are considered the highest priority for funding, planning, and conservation actions, Information about status and hreats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment.
•**M = Medium Priority:** These species warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

***Resources***

• *Check-List of North American Birds, 7th edition (AOU, 1998);*
• *(AOU website );*
• *Amphibian species accounts (Amphibiaweb website );*
• *Terrestrial Mammal Species of Special Concern in California (Bolster, 1998);*
• *Mammals of North America (Bowers et al., 2004);*
• *Special Status Animals in California, Including BLM Designated Sensitive Species (BLM, 2010);*
• *Life History Accounts and Range Maps (CDFG, 1988a and updates; CDFG, 1988b and updates; CDFG, 1988c and updates);*
• *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
• *Atlas of the Biodiversity of California (CDFG, 2003);*
• *RareFind, CDFW, California Natural Diversity Database (CNDDB );*
• *State & Federally Listed Endangered & Threatened Animals of California (CDFW, 2016);*
• *Special Animals List (CDFG, 2016);*
• *CDFW's California Wildlife Habitat Relationships: Online Life History Accounts and Range Maps ;*
• *California Herps website ;*
• *California Partners in Flight website ;*
• *CNAH website ;*
• *AOU supplement (Chesser et al., 2015);*
• *A Field Guide to Hawks of North America, Second Edition (Clark and Wheeler, 2001);*
• *Mammals of California (Eder, 2005);*
• *Fairy Shrimps of California's Puddles, Pools, and Playas (Eriksen and Belk, 1999);*
• *Atlas of Breeding Birds, Orange County, California (Gallagher, 1997);*


***Notes:***
•***Yes*** *= the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. The wildlife species has a potential to occur within the BSA. Further evaluation is needed.*
•***No*** *= the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.*
•***Present*** *= observed within the BSA during surveys.*
•***Elevation:*** *The BSA contains elevations ranging from approximately 3,606 to 3,620 feet above mean sea level (amsl; Google Earth, 2022).*

# APPENDIX C2

# SPECIES OCCURRENCE POTENTIAL EVALUATION

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA | Comment Section |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | | |
| **Listed Endangered, Threatened, Candidate and State Rare Plants: Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | | | | |
| *Yucca brevifolia (=Yucca baccata* var. *brevifolia)* | Joshua tree | SCT | Lifeform: tree<br>Habitats: desert flats, slopes, sagebrush, desert shrub, pinyon-juniper, desert grasslands<br>Soils: silts, loams, and/or sands that are fine, loose, well drained and/or gravelly; alkaline or saline soils<br>Bloom Period: April to May | 1,312 - 6,561 | Yes | Yes | Yes | **Present.** There are six individual Joshua trees on the project site. | |
| **Sensitive Plants: These plants have no official status under the ESA, the CESA, and/or the NPPA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.** | | | | | | | | | |
| *Opuntia basilaris var. brachyclada* | short-joint beavertail | CRPR: 1B.2 | Lifeform: perennial stem succulent<br>Habitats: chaparral, Joshua tree woodlands, Mojavean desert scrub, riparian woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils or coarse granitic, loam, sandy to rocky<br>Bloom Period: April to August | 1,395 – 5,904 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| *Asclepias nyctaginifolia* | Mojave milkweed | CRPR: 2B.1 | Lifeform: perennial herb<br>Habitats: Mojavean desert scrub and pinyon and juniper woodlands<br>Soils: sandy soils, often near washes<br>Bloom Period: May to June | | Yes | Yes | Yes | **Low potential to occur.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA | |
| *Loeflingia squarrosa var. artemisiarum* | sagebrush loeflingia | CRPR: 2B.2 | Lifeform: annual herb<br>Habitats: Great Basin sagebrush scrub and Sonoran desert scrub<br>Soils: sandy soils of desert dunes and flats<br>Bloom Period: April to May | 2,296 – 5,297 | Yes | Yes | Yes | **Low potential to occur.** The BSA contains suitable sandy soils to support this species. However, the project area and other undeveloped areas in the BSA are frequently graded and therefore this species only has a low potential to occur. | |
| *Scutellaria bolanderi ssp. austromontana* | southern mountains skullcap (=southern skullcap) | CRPR: 1B.2 | Lifeform: perennial rhizomatous herb<br>Habitats: oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests<br>Soils: gravelly streamside soils<br>Bloom Period: June to August | 1,394 – 6,560 | No | Yes | No | **No potential to occur**. The BSA lacks suitable gravelly streamside soils and suitable habitat such as oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests. | |
| *Eremothera boothii ssp. boothii (=Camissonia boothii ssp. boothii)* | Booth's evening-primrose | CRPR: 2B.3 | Lifeform: annual herb<br>Habitats: Joshua tree woodlands and pinyon and juniper woodlands<br>Bloom Period: April to September | 2,673 – 7,872 | Yes | Yes | Yes | **Low potential to occur**. Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances. | |
| *Canbya candida* | white pygmy-poppy (=pygmy poppy) | CRPR: 4.2 | Lifeform: annual herb<br>Habitats: Mojavean desert scrub, Joshua tree woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils<br>Bloom Period: March to June | 1,968 – 4,789 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Saltugilia latimeri (=Gilia latimeri)* | Latimer's woodlands-gilia | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: chaparral, Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: coarse sandy to rocky soils, often granitic, alluvial soils<br>Bloom Period: March to June | 1,312 – 6,232 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances,. | |
| *Chorizanthe xanti var. leucotheca* | white-bracted spineflower | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: sandy or gravelly substrates<br>Bloom Period: April to June | 984 – 3,936 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| **Legend and Notes** | | | | | | | | | |

***California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes:*** *tth* e CESA and NPPA are administered by CDFW. The official listing of Plants of California Declared to Be Endangered, Threatened or Rare is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.

- **SCT = state candidate for listing as threatened**: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).

done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

- **CRPR 1B** = California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

***California Native Plant Society (CNPS) Threat Ranks:*** The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

- **.2** = moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

***Other:***

- **ND** = no designation
- **Annual**: grows from seed and reproduce within a single year.
- **Perennial:** lives more than one year.
- **Deciduous:** plants shed their leaves for part of the year.
- **Evergreen:** plants retain their leaves for an entire year.
- **Mesic habitat:** a habitat with a moderate or well-balanced supply of moisture.
- **Hemiparasitic:** plants that are connected to host plants and derive energy, water, and minerals from them, but also maintain their own functional root systems or photosynthetic surfaces.
- **Parasitic:** plants that are connected to host plants and rely solely on them for energy, water, and nutritional requirements.
- **Carnivorous**: plants that trap insects and other small animals and derive nourishment from them.
- **Herbs**: plants that are herbaceous and lack above-ground woody tissue.
  - **Bulbiferous herb:** plants that have fleshy underground storage organs typically derived from scale leaves (this category includes cormiferous and other similar plants in which storage organs have other origins).
  - **Rhizomatous herb:** plants that have underground stems (rhizomes), typically bearing shoots which develop into new plants.
  - **Stoloniferous herb:** plants that have above-ground runners (stolons) which typically root and produce new plants.
- **Shrubs:** smaller woody perennials that retain most of their above-ground woody tissue and are typically many-stemmed.
  - **Leaf succulents**: succulents with thick, fleshy leaves.
  - **Stem succulents**: succulents with thick, fleshy stems and reduced or absent leaves.
- **Trees:** larger woody perennials that retain all of their above-ground wood tissue and are typically single-stemmed.
- **Vines:** twining woody perennials requiring external support for growth.
- **Mosses:** small green plants (one of three groups of bryophytes) with structures that resemble miniature leaves and stems. The leaves generally have a midrib called a costa. The sporophyte (the spore-bearing structure) is persistent for weeks.
- **Liverworts:** small green plants (one of three groups of bryophytes). There are both leafy and thalloid types - leafy liverworts lack a midrib on the leaves, while thalloid liverworts have no leaves. The sporophyte is short-lived

***Notes:***

The BSA contains approximate elevations of 3,606 to 3,620 feet above mean sea level (amsl).
Yes = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.
No = the BSA is located outside the plant species' known distribution, elevation range, and/or the BSA lacks suitable habitats and/or soils to support the plant species. It is highly unlikely for the plant species to have a potential to occur within the BSA. No further evaluation is needed.
Present = observed within the BSA during surveys.
A CNPS elevation range is provided for each taxon in feet. The stated range is for the California portion of a plant's range only (if the taxon also occurs outside the state). These CNPS elevation range data are accumulated from literature, herbarium specimens, and field survey information.

***Resources***

- *The Jepson Desert Manual (Baldwin et al., 2002);*
- *The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al., 2012);*
- *BLM Special Status Plants under the jurisdiction of the California State Office as of October 30, 2013 (BLM, 2013);*
- *The Final Environmental Impact Report and Statement (Final EIR/S) for the West Mojave Plan (BLM, 2005);*
- *Final Environmental Impact Statement. Proposed Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) (BLM and CDFG, 2002);*
- *(Calflora website );*
- *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
- *CNDDB ;*
- *Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2016);*
- *State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW, 2016);*
- *(CNPS website );*
- *(eFloras.org website );*
- *(NatureServe Explorer website );*
- *Rare Plants of San Diego County (Reiser, 2001);*
- *USDA Forest Service, Pacific Southwest Region, Sensitive Plant Species List by Forest (USFS, 2013).*
- *UltraSystems in-house records.*

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: Located Within Species' Distribution and/or Elevation Range (if known) | The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Listed Invertebrates** | | | | | | |
| *Rhaphiomidas terminatus abdominalis* | Delhi sands flower-loving fly | FE | Habitats: sparsely vegetated area, providing sparse ground cover (10-20%)<br>Soils: unique, fine, sandy soils | Yes | No | **No potential to occur**. The BSA does not contain suitable soil (Delhi sands) or vegetation habitats to support this species. |
| *Euphydryas editha quino (=Euphydryas editha wrighti)* | quino checkerspot butterfly | FE | Habitats: grasslands, remnant forbland, open coastal sage scrub, open chamise chaparral, open red shank chaparral, juniper woodland, and semi-desert scrub, open or sparsely vegetated rounded hilltops, ridgelines, rocky outcrops of chaparral and coastal sage scrub<br>Soils: loamy soils with moderate to high amounts of clay<br>Characteristics: adult butterflies will only deposit eggs on species they recognize as host plants | Yes | No | **Low potential to occur.** The BSA contains some desert scrub habitat, however it exists in a disturbed state. In addition, the soils in the BSA do not contain a high clay faction; this species typically occurs in areas with clay-loam soils. The soils of the BSA are primarily loamy-fine-sand. |
| *Bombus crotchii* | Crotch bumble bee | candidate endangered | Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats: This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Listed Fish** | | | | | | |
| *Siphateles bicolor mohavensis (=Siphateles mohavensis, =Gila bicolor mohavensis)* | Mojave tui chub | FE, SE, fully protected | Habitats: weedy, near-shore areas of lakes, in the shallow areas of streams flowing out of lakes, and in mineral springs<br>Characteristics: needs vegetation for spawning | Yes | No | **No potential to occur**. There is no suitable habitat (wetlands) in the BSA that would support populations of the species. . |
| **Listed Amphibians** | | | | | | |
| *Anaxyrus californicus (=Bufo californicus)* | arroyo toad | FE, SSC | Habitats: sandy riverbanks, streams, washes, and arroyos, breeds in and near streams<br>Characteristics: nearby sandy terraces, dampened in places by capillary action, and with some scattered vegetation providing surface sheltering and burrowing sites and foraging areas | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Rana draytonii (=Rana aurora draytonii)* | California red-legged frog | FT, SSC | Habitats: lowland streams, wetlands and marshes, lakes, riparian woodlands, ponds, reservoirs, and other sources of permanent water<br>Characteristics: require cold water pond habitats with emergent and submergent vegetation | No | No | **Not expected to occur.** The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| *Rana muscosa* | southern mountain yellow-legged frog | FE, SE, CDFW:WL | Habitats: sunny riverbanks, meadow streams, isolated pools, lake borders, and rocky stream courses in the mountains of Southern California<br>Characteristics: prefer open stream and lake margins that gently slope | No | No | **Not expected to occur**. The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| **Listed Reptiles** | | | | | | |
| *Gopherus agassizii* | desert tortoise (=Mohave desert tortoise) | FT, ST | Habitats: desert scrub, creosote bush scrub, Mojave-saltscale scrub, desert wash, Joshua tree habitats and flat desert having sandy or gravelly soil, but occurs in almost every desert habitat except on the most precipitous slopes<br>Characteristics: avoid plateaus, playas, sand dunes, steep slopes and areas with many obstacles to free movement | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Charina umbratica* | southern rubber boa | ST | Habitats: moist oak-conifer and mixed-conifer coniferous forests and woodland habitats, large grassy fields or other open areas<br>Characteristics: require loose, moist soil for burrowing, rock outcrops serve as hibernacula | No | No | **No potential to occur.** The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species |
| **Listed Birds** | | | | | | |
| *Gymnogyps californianus* | California condor | FE, SE, fully protected | Habitats: semi-arid, pine or chaparral covered rugged mountain ranges, higher elevations, foraging habitat lies in foothills predominately covered by grasslands or oak-savannah habitats<br>Characteristics: habitat requirements may be adequate food supplies, open-enough habitat that food can be readily found and accessed | Yes | No | **No potential to occur.** The BSA does not contain adequate open habitat to support this species. In addition, suitable breeding habitats are absent from the BSA. This species is rarely detected in urbanized areas, and while the BSA and its surrounding vicniity contain some open space, this species is most likely to utilize the habitat provided by the San Bernardino and Angeles National Forests in the region rather than areas that have undergone some disturbance such as the BSA. |
| *Haliaeetus leucocephalus* | bald eagle | SE, fully protected, BCC, Season of Concern: nesting & wintering | Habitats: seacoasts, rivers, wetlands swamps, and large lakes, in winter in dense, sheltered, remote conifer stands<br>Characteristics: large nests are normally built in the upper canopy of large trees, usually conifers | Yes | No | **No potential to occur.** The BSA does not contain adequate large bodies of water, or free flowing rivers with abundant fish for foraging. In addition, suitable perching sites, roosting sites, and breeding habitats are absent from the BSA. Any occurrence would mostly likely be restricted to passage. |
| *Buteo swainsoni* | Swainson's hawk | ST, BCC | Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands<br>Characteristics: nest in juniper trees of juniper-sage flats not near riparian zones | Yes | Yes | **Low potential to occur.** The BSA is located within the historical breeding range of the species, but breeding populations are likely extirpated from the region. The BSA supports marginal foraging and there is low potential for migrating or transient individuals to forage in the BSA. There is no potential for the species to nest within the BSA. |
| *Coccyzus americanus occidentalis* | western yellow-billed cuckoo | FT, SE,, BCC, | Habitats: relatively dense growths of trees and shrubs in riparian habitats that lines rivers and streams<br>Characteristics: Cuckoos have large home ranges, often exceeding 50 acres, and sometimes approaching 100 acres | Yes | No | **No potential to occur**. The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. Due to these factors, there is no potential for occurrence of this species. |
| *Empidonax traillii extimus* | southwestern willow flycatcher | FE, SE, Season of Concern: nesting | Habitats: dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes, surface water, saturated soil, or herbaceous wetland plants present during the early summer months; woody riparian vegetation is present | Yes | No | **Not expected to occur.** The BSA does not contain habitat (riparian thickets) needed to support populations of the species. |
| *Vireo bellii pusillus* | least Bell's vireo | FE, SE, Season of Concern: nesting | Habitats: dry, intermittent streams, on the desert slopes mesquite (Prosopis sp.) and sandbar willow in canyon locations, willow-dominated riverine riparian habitats with well-developed overstories, understories, and low densities of aquatic and herbaceous cover | Yes | No | **No potential to occur.** The BSA does not contain suitable breeding and foraging riparian and aquatic habitats to support this species. Furthermore, the BSA lacks riparian habitat with well-developed understories and overstories. |
| **Listed Mammals** | | | | | | |
| *Xerospermophilus mohavensis (=Spermophilus mohavensis)* | Mohave ground squirrel | ST | Habitats: arid Mohave Desert of California<br>Soil: saltbush scrub, alkali desert scrub, desert scrub, creosote bush scrub | Yes | No | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Sensitive Wildlife: These animals have no official status under the ESA and/or the CESA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations** | | | | | | |
| **Sensitive Invertebrates** | | | | | | |
| *Helminthoglypta taylori* | westfork shoulderband | Special Animals List | Habitat: talus and rock piles on mountain slopes<br>Characteristics: narrow endemic terrestrial snail from the desert foothills of the San Bernardino Mountains | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Plebulina emigdionis* | San Emigdio blue butterfly | Special Animals List | Habitats: arid washes, dry riverbeds, and intermittent streamsides as well as adjacent flats in lower Sonoran zone<br>Characteristics: flight time is from March through September. Hosts for caterpillars include Shadscale (*Atriplex canescens* ) | Yes | Yes | **Not expected to occur.** The BSA is in the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There is no shadscale scrub in the BSA. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Danaus plexippus* pop. 1 | monarch butterfly | FC: California overwintering population | Habitats: wind-protected tree groves (eucalyptus [Eucalyptus sp.], Monterey pine [Pinus radiata], cypress), with nectar and water sources nearby | Yes | No | **No potential to occur.** The BSA offers geerally poor wind protection. |
| **Sensitive Reptiles** | | | | | | |
| *Actinemys marmorata (=Actinemys marmorata marmorata) (=Emys marmorata)* | northern western pond turtle (=northern western pond turtle) | SSC | Habitats: stagnant or slow-moving water in aquatic habitats, ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Actinemys pallida (=Actinemys marmorata pallida)* | southern western pond turtle | SSC, BLMS, USFS: S, WRCMSHCP: Covered | Habitats: intermittent streams, small ponds, small lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and sewage treatment lagoons | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Phrynosoma blainvilli (=Phrynosoma coronatum) (=Phrynosoma coronatum blainvillei)* | Blainville's horned lizard (=coast horned lizard) (=San Diego horned lizard) | SSC | Habitats: wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest, habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Thamnophis hammondii* | two-striped garter snake | SSC | Habitats: aquatic and it is rarely found far from water, permanent or semi-permanent bodies of freshwater and adjacent riparian habitat, oak woodlands, chaparral and coniferous forests on the coastal slopes of mountains and foothills to sea level | No | No | **Not expected to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| **Sensitive Birds** | | | | | | |
| *Circus hudsonius (=Circus cyaneus)* | northern harrier | SSC | Habitats: northern harriers breed and forage in a variety of open (treeless) habitats, open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks | Yes | No | **Not expected to occur.** The BSA does not contain suitable foraging and breeding habitats to support this species such as , open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks. |
| *Accipiter cooperii* | Cooper's hawk | WL, Season of Concern: nesting | Habitats: broken woodland and habitat edges<br>Characteristics: tolerant of human activities near the nest and is seen more often nesting in urban/residential areas | Yes | Yes | **Low potential to occur**. This species has adapted to disturbed environments and human activity. There is marginal foraging habitat and low potential for this species to forage in the BSA. Due to a lack of suitable nesting habitat (trees) there is no potential for the species to nest in the BSA. |
| *Aquila chrysaetos* | golden eagle | fully protected, WL, BCC, Season of Concern: nesting and wintering | Habitats: mountainous canyon land, rimrock terrain of open desert and grassland areas, open rolling foothills of grasslands, oak savannas, oak and juniper woodlands, chaparral, mountain areas, and desert, open habitats including grasslands, deserts, savannahs, and shrublands<br>Characteristics: hilly or mountainous country, deeply cut canyons rising to open mountain slopes and crags are ideal habitat | Yes | Yes | **Not expected to occur.** This species is characteristic of remote, open areas and avoids human developments and activities. There is no suitable nesting or foraging habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Athene cunicularia* | burrowing owl | SSC, BCC, Season of Concern: burrowing sites and some wintering sites | Habitats: open, dry, flat ground or low rolling hills with sparse vegetation and available burrows<br>Characteristics: dig their own burrows in the soft banks of irrigation canals and ditches | Yes | Yes | **High potential to occur.** The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of human disturbances. Due to these factors, there is high potential for the species to occur in the BSA. |
| *Strix occidentalis occidentalis* | California spotted owl | SSC, BCC | Habitats: forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies (>70% canopy closure), multiple canopy layers, and downed woody debris<br>Characteristics: low elevations, it uses coastal oak woodland, valley foothill riparian, and redwood (Sequoia sempervirens) forests | Yes | No | **Not expected to occur.** The BSA does not contain suitable oak/conifer woodland or montane forest breeding, roosting, or foraging habitats to support this species. |
| *Asio otus* | long-eared owl | SSC Season of Concern: nesting | Habitats: conifer, oak, riparian, pinyon-juniper, and desert woodlands<br>Characteristics: long-eared owl appears to be more associated with forest edge habitat | Yes | Yes | **Not expected to occur.** There is no suitable foraging, roosting, or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Falco mexicanus* | prairie falcon | WL, BCC, Season of Concern: nesting | Habitats: annual grasslands to alpine meadows on open, dry, level or hilly terrain, perennial grasslands, savannahs, rangeland, some agricultural fields, desert scrub areas and even marshland and ocean shores<br>Characteristics: during the winter- reside in cultivated fields, lakeshores, desert scrub | Yes | Yes | **Low potential to occur.** The BSA does not contain suitable nesting habitat (rocky cliffs), and there is no potential for this species to nest in the BSA. There is marginal foraging habitat in the BSA, and there is low potential for this species to occur in the BSA as a forager., |
| *Lanius ludovicianus* | loggerhead shrike | SSC, BCC, Season of Concern: nesting | Habitats: agricultural fields, pastures with fence rows, old orchards, savannas, prairies mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs<br>Characteristics: nest in isolated trees or large shrubs | Yes | Yes | **Moderate potential to occur.** The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. |
| *Vireo vicinior* | gray vireo | SSC, BCC | Habitats: arid, shrub-covered slopes in pinyon-juniper, juniper, and chamise-redshank chaparral habitats on foothills and mesas<br>Characteristics: they forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 feet above ground | Yes | Yes | **Not expected to occur.**The BSA is outside of the known breeding range of the species and does not support habitat (dense, shrubby vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Toxostoma lecontei* | Le Conte's thrasher | SSC, BCC | Habitats: open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub, Joshua tree habitats with scattered shrubs, open desert flats, washes and alluvial fans with sandy and/or alkaline soil<br>Characteristics: usually does not occur in areas of monotypic creosote bush scrub | Yes | Yes | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| *Setophaga petechia (=Dendroica petechia)* | yellow warbler | SSC, BCC, Season of Concern: nesting | Habitats: deciduous trees of the riparian woodland from coastal desert woodlands to the Sierra Nevada – willows (Salix sp.), cottonwoods (Populus sp.), aspens (Populus sp.), California sycamores (Platanus racemosa), and alders (Alnus sp.)<br>Characteristics: nests are deep cups, placed in an upright fork in a deciduous sapling or shrub, typically 2 to 16 feet high | Yes | No | **Not expected to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (riparian vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Icteria virens* | yellow-breasted chat | SSC, Season of Concern: nesting | Habitats: dense riparian thickets of willows, vines, and brush associated with streams and other wetland habitats<br>Characteristics: nest is an open cup placed in dense shrubs or thickets within 3 to 8 feet above ground along a stream or river | Yes | No | **No potential to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (dense riparian thickets) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Piranga rubra* | summer tanager | SSC, Season of Concern: nesting | Habitats: desert riparian habitat, mature, dense, desert riparian habitat dominated by cottonwoods (Populus sp.) and willows (Salix sp.) along streams and rivers | Yes | | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA.. |
| **Sensitive Mammals** | | | | | | |
| *Chaetodipus fallax pallidus* | pallid San Diego pocket mouse | SSC | Habitats: sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California<br>Characteristics: mainly in arid coastal and desert border areas | Yes | No | **Not expected to occur**. The BSA is in of the known distributional range of the species and contains sandy soils, but the soils there have been subjected to repeated surface disturbances. There is a lack of natural vegetation and rocky or gravelly inclusions in the soil that is preferred by this species. Due to these factors, there is no potential for the species to occur in the BSA |
| *Microtus californicus mohavensis* | Mohave river vole | SSC | Habitat: grassy or riparian habitats within the Mojave River corridor<br>Characteristics: inhabits areas of infrequent flooding | Yes | No | **Not expected to occur.** The BSA does not support habitat (riparian) needed to support populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA |
| *Lasiurus cinereus* | hoary bat | ND | Habitats: near open grassy areas in coniferous and deciduous forest or near lakes, open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding<br>Characteristics: winter roosts include sides of buildings and tree trunks | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA.. |
| *Vulpes macrotis arsipus* | desert kit fox | Protected by Section 460 of the California Code of Regulations [CCR], Title 14 | Habitats: sparsely vegetated scrub habitats and native or annual grasslands, alkali sink scrub, saltbush scrub, and chenopod scrub, although oak woodlands, vernal pools, alkali meadows and playas also provide habitat<br>Characteristics: located on gradual west to northwest facing slopes, with characteristically deep, light-textured and virtually stoneless soils | Yes | No | **Low potential to occur**. The BSA contains low-quality foraging habitat for this fox, however occurrence of this species in the BSA would likely be restricted to passage and/or occasional foraging. There is a lack of suitable, undisturbed breeding habitat for this species as the BSA frequently experiences various disturbaces including human activity, vehicle traffic, and soil compaction, |
| *Taxidea taxus* | American badger | SSC | Habitats: alpine meadows to elevations as low as Death Valley<br>Characteristics: requirements - sufficient food, friable soils, and relatively open, uncultivated ground | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |

***Legend and Notes***

***Federal Endangered Species Act (ESA) Listing Codes: the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.***

- **FE** = federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT** = federally listed as threatened: any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FC** = federal candidate for listing: candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them for listing as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by higher priority listing actions to address species in greater need. A proposed regulation has not yet been published in the Federal Register for these species.
- **FPE** = federally proposed for listing as endangered: a candidate species that has been proposed by USFWS or NMFS for listing as endangered and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPT** = federally proposed for listing as threatened: a candidate species that has been proposed by USFWS or NMFS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPD** = federally proposed for delisting: a species that has been proposed by USFWS or NMFS for delisting (or down listing from endangered to threatened) and the proposed rule to delist has been published in the Federal Register.

***California Endangered Species Act (CESA) Listing Codes: the CESA is administered by CDFW. The official listing of Animals of California Declared To Be Endangered or Threatened is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.***

- **SE =** state-listed as endangered: "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).
- **ST** = state-listed as threatened: "threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts (Fish and Game Code § 2067).
- **SCE** = state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCT** = state candidate for listing as threatened: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed by publication in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCD** = state candidate for delisting: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for removal from either the list of endangered species or the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to remove the species to either list.

***California Department of Fish and Wildlife (CDFW) Designations:***

For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering

- **SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- **Fully protected:** fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).
- **WL = watch list**: this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.
- **Special Animals List**: The Special Animals List contains taxa that are actively inventoried, tracked, and mapped by the CNDDB, as well as taxa for which mapped data may not yet be incorporated into CNDDB user products

***United States Fish and Wildlife Service (USFWS) Designations:***

- **FSC = federal species of concern**: federal species of concern is an informal term. It is not defined in the ESA. The term commonly refers to species that are declining or appear to be in need of conservation.
- **BCC = bird of conservation concern**: a bird of conservation concern is listed in the USFWS' 2008 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |

***Western Bat Working Group (WBWG) Designations:***
The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America.
•**H = High Priority:** These species are considered the highest priority for funding, planning, and conservation actions, Information about status and hreats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment.
•**M = Medium Priority:** These species warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

***Resources***
- *Check-List of North American Birds, 7th edition (AOU, 1998);*
- *(AOU website );*
- *Amphibian species accounts (Amphibiaweb website );*
- *Terrestrial Mammal Species of Special Concern in California (Bolster, 1998);*
- *Mammals of North America (Bowers et al., 2004);*
- *Special Status Animals in California, Including BLM Designated Sensitive Species (BLM, 2010);*
- *Life History Accounts and Range Maps (CDFG, 1988a and updates; CDFG, 1988b and updates; CDFG, 1988c and updates);*
- *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
- *Atlas of the Biodiversity of California (CDFG, 2003);*
- *RareFind, CDFW, California Natural Diversity Database (CNDDB );*
- *State & Federally Listed Endangered & Threatened Animals of California (CDFW, 2016);*
- *Special Animals List (CDFG, 2016);*
- *CDFW's California Wildlife Habitat Relationships: Online Life History Accounts and Range Maps ;*
- *California Herps website ;*
- *California Partners in Flight website ;*
- *CNAH website ;*
- *AOU supplement (Chesser et al., 2015);*
- *A Field Guide to Hawks of North America, Second Edition (Clark and Wheeler, 2001);*
- *Mammals of California (Eder, 2005);*
- *Fairy Shrimps of California's Puddles, Pools, and Playas (Eriksen and Belk, 1999);*
- *Atlas of Breeding Birds, Orange County, California (Gallagher, 1997);*

***Notes:***
- ***Yes** = the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. The wildlife species has a potential to occur within the BSA. Further evaluation is needed.*
- ***No** = the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.*
- ***Present** = observed within the BSA during surveys.*
- ***Elevation:** The BSA contains elevations ranging from approximately 3,606 to 3,620 feet above mean sea level (amsl; Google Earth, 2022).*

| Scientific Name (=Synonym) | Common Name (=Synonym) | Status | General Habitat Description in California | Plant Elevation Range (feet amsl) | BSA Contains Potential Suitable Habitats | BSA is Located Within the Plant Species' Known: | | Potential For Occurrence in the BSA | Comment Section |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Elevation Range | General Distribution | | |
| **Listed Endangered, Threatened, Candidate and State Rare Plants: Plants with official status under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and/or the Native Plant Protection Act (NPPA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | | | | |
| *Yucca brevifolia (=Yucca baccata* var. *brevifolia)* | Joshua tree | SCT | Lifeform: tree<br>Habitats: desert flats, slopes, sagebrush, desert shrub, pinyon-juniper, desert grasslands<br>Soils: silts, loams, and/or sands that are fine, loose, well drained and/or gravelly; alkaline or saline soils<br>Bloom Period: April to May | 1,312 - 6,561 | Yes | Yes | Yes | **Present.** There are six individual Joshua trees on the project site. | |
| **Sensitive Plants: These plants have no official status under the ESA, the CESA, and/or the NPPA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations.** | | | | | | | | | |
| *Opuntia basilaris var. brachyclada* | short-joint beavertail | CRPR: 1B.2 | Lifeform: perennial stem succulent<br>Habitats: chaparral, Joshua tree woodlands, Mojavean desert scrub, riparian woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils or coarse granitic, loam, sandy to rocky<br>Bloom Period: April to August | 1,395 – 5,904 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| *Asclepias nyctaginifolia* | Mojave milkweed | CRPR: 2B.1 | Lifeform: perennial herb<br>Habitats: Mojavean desert scrub and pinyon and juniper woodlands<br>Soils: sandy soils, often near washes<br>Bloom Period: May to June | 2,682 - 5,336 | Yes | Yes | Yes | **Low potential to occur.** The BSA is located outside of the known distributional range of the species. The BSA contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA | |
| *Loeflingia squarrosa var. artemisiarum* | sagebrush loeflingia | CRPR: 2B.2 | Lifeform: annual herb<br>Habitats: Great Basin sagebrush scrub and Sonoran desert scrub<br>Soils: sandy soils of desert dunes and flats<br>Bloom Period: April to May | 2,296 – 5,297 | Yes | Yes | Yes | **Low potential to occur.** The BSA contains suitable sandy soils to support this species. However, the project area and other undeveloped areas in the BSA are frequently graded and therefore this species only has a low potential to occur. | |
| *Scutellaria bolanderi ssp. austromontana* | southern mountains skullcap (=southern skullcap) | CRPR: 1B.2 | Lifeform: perennial rhizomatous herb<br>Habitats: oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests<br>Soils: gravelly streamside soils<br>Bloom Period: June to August | 1,394 – 6,560 | No | Yes | No | **No potential to occur**. The BSA lacks suitable gravelly streamside soils and suitable habitat such as oak or pine woodlands, chaparral, cismontane woodlands or lower montane coniferous forests. | |
| *Eremothera boothii ssp. boothii (=Camissonia boothii ssp. boothii)* | Booth's evening-primrose | CRPR: 2B.3 | Lifeform: annual herb<br>Habitats: Joshua tree woodlands and pinyon and juniper woodlands<br>Bloom Period: April to September | 2,673 – 7,872 | Yes | Yes | Yes | **Low potential to occur**. Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances. | |
| *Canbya candida* | white pygmy-poppy (=pygmy poppy) | CRPR: 4.2 | Lifeform: annual herb<br>Habitats: Mojavean desert scrub, Joshua tree woodlands, and pinyon and juniper woodlands<br>Soils: sandy soils<br>Bloom Period: March to June | 1,968 – 4,789 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Saltugilia latimeri (=Gilia latimeri)* | Latimer's woodlands-gilia | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: chaparral, Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: coarse sandy to rocky soils, often granitic, alluvial soils<br>Bloom Period: March to June | 1,312 – 6,232 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances,. | |
| *Chorizanthe xanti var. leucotheca* | white-bracted spineflower | CRPR: 1B.2 | Lifeform: annual herb<br>Habitats: coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodlands<br>Soils: sandy or gravelly substrates<br>Bloom Period: April to June | 984 – 3,936 | Yes | Yes | Yes | **Low potential to occur.** Although disturbed, the project site contains Joshua tree woodlands that have been graded over, in addition to six living Joshua trees and one living California juniper. The project site also contains suitable sandy soils to support this species. There is only low-quality available habitat for this species because the BSA has undergone significant disturbances, | |
| **Legend and Notes** | | | | | | | | | |

***California Endangered Species Act (CESA) and California Native Plant Protection Act (NPPA) Listing Codes:*** *tth* e CESA and NPPA are administered by CDFW. The official listing of Plants of California Declared to Be Endangered, Threatened or Rare is contained in the California Code of Regulations, Title 14, § 670.2. Species, subspecies and varieties of California native plants are declared to be endangered, threatened as defined by § 2062 and § 2067 of the Fish and Game Code or rare as defined by § 1901 of the Fish and Game Code.

- **SCT = state candidate for listing as threatened**: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).

***California Rare Plant Ranks*** (Formerly known as CNPS Lists): the CNPS is a statewide, nonprofit organization that maintains, with CDFW, an Inventory of Rare and Endangered Plants of California. In the spring of 2011, CNPS and CDFW officially changed the name "CNPS List" or "CNPS Ranks" to "California Rare Plant Rank" (or CPRP). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review Groups and the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

- **CRPR 1B** = California Rare Plant Rank 1B - plants rare, threatened, or endangered in California and elsewhere: plants with a CRPR of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. All of the plants constituting CRPR 1B meet the definitions of § 2062 and § 2067 (CESA) of the Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

***California Native Plant Society (CNPS) Threat Ranks:*** The CNPS Threat Rank is an extension added onto the California Rare Plant Rank (CRPR) (as a decimal code) and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. A Threat Rank is present for all CRPR 1B's, 2B's, 4's, and the majority of CRPR 3's. CRPR 4 plants are seldom assigned a Threat Rank of .1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a CRPR. In addition, all CRPR 1A and 2A (presumed extirpated in California), and some CRPR 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension.

- **.2** = moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

***Other:***

- **ND** = no designation
- **Annual**: grows from seed and reproduce within a single year.
- **Perennial:** lives more than one year.
- **Deciduous:** plants shed their leaves for part of the year.
- **Evergreen:** plants retain their leaves for an entire year.
- **Mesic habitat:** a habitat with a moderate or well-balanced supply of moisture.
- **Hemiparasitic:** plants that are connected to host plants and derive energy, water, and minerals from them, but also maintain their own functional root systems or photosynthetic surfaces.
- **Parasitic:** plants that are connected to host plants and rely solely on them for energy, water, and nutritional requirements.
- **Carnivorous**: plants that trap insects and other small animals and derive nourishment from them.
- **Herbs**: plants that are herbaceous and lack above-ground woody tissue.
  - **Bulbiferous herb:** plants that have fleshy underground storage organs typically derived from scale leaves (this category includes cormiferous and other similar plants in which storage organs have other origins).
  - **Rhizomatous herb:** plants that have underground stems (rhizomes), typically bearing shoots which develop into new plants.
  - **Stoloniferous herb:** plants that have above-ground runners (stolons) which typically root and produce new plants.
- **Shrubs:** smaller woody perennials that retain most of their above-ground woody tissue and are typically many-stemmed.
  - **Leaf succulents**: succulents with thick, fleshy leaves.
  - **Stem succulents**: succulents with thick, fleshy stems and reduced or absent leaves.
- **Trees:** larger woody perennials that retain all of their above-ground wood tissue and are typically single-stemmed.
- **Vines:** twining woody perennials requiring external support for growth.
- **Mosses:** small green plants (one of three groups of bryophytes) with structures that resemble miniature leaves and stems. The leaves generally have a midrib called a costa. The sporophyte (the spore-bearing structure) is persistent for weeks.
- **Liverworts:** small green plants (one of three groups of bryophytes). There are both leafy and thalloid types - leafy liverworts lack a midrib on the leaves, while thalloid liverworts have no leaves. The sporophyte is short-lived

***Notes:***

The BSA contains approximate elevations of 3,606 to 3,620 feet above mean sea level (amsl).
Yes = the BSA is located within the plant species' known distribution, elevation range, and/or the BSA contains suitable habitats and/or soils to support the plant species. The plant species has a potential to occur within the BSA. Further evaluation is needed.
No = the BSA is located outside the plant species' known distribution, elevation range, and/or the BSA lacks suitable habitats and/or soils to support the plant species. It is highly unlikely for the plant species to have a potential to occur within the BSA. No further evaluation is needed.
Present = observed within the BSA during surveys.
A CNPS elevation range is provided for each taxon in feet. The stated range is for the California portion of a plant's range only (if the taxon also occurs outside the state). These CNPS elevation range data are accumulated from literature, herbarium specimens, and field survey information.

***Resources***

- *The Jepson Desert Manual (Baldwin et al., 2002);*
- *The Jepson Manual: Vascular Plants of California, second edition (Baldwin et al., 2012);*
- *BLM Special Status Plants under the jurisdiction of the California State Office as of October 30, 2013 (BLM, 2013);*
- *The Final Environmental Impact Report and Statement (Final EIR/S) for the West Mojave Plan (BLM, 2005);*
- *Final Environmental Impact Statement. Proposed Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) (BLM and CDFG, 2002);*
- *(Calflora website );*
- *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
- *CNDDB ;*
- *Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2016);*
- *State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW, 2016);*
- *(CNPS website );*
- *(eFloras.org website );*
- *(NatureServe Explorer website );*
- *Rare Plants of San Diego County (Reiser, 2001);*
- *USDA Forest Service, Pacific Southwest Region, Sensitive Plant Species List by Forest (USFS, 2013).*
- *UltraSystems in-house records.*

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: Located Within Species' Distribution and/or Elevation Range (if known) | The BSA: Contains Suitable Foraging, Roosting, and/or Breeding Habitats | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Listed Invertebrates** | | | | | | |
| *Rhaphiomidas terminatus abdominalis* | Delhi sands flower-loving fly | FE | Habitats: sparsely vegetated area, providing sparse ground cover (10-20%)<br>Soils: unique, fine, sandy soils | Yes | No | **No potential to occur**. The BSA does not contain suitable soil (Delhi sands) or vegetation habitats to support this species. |
| *Euphydryas editha quino (=Euphydryas editha wrighti)* | quino checkerspot butterfly | FE | Habitats: grasslands, remnant forbland, open coastal sage scrub, open chamise chaparral, open red shank chaparral, juniper woodland, and semi-desert scrub, open or sparsely vegetated rounded hilltops, ridgelines, rocky outcrops of chaparral and coastal sage scrub<br>Soils: loamy soils with moderate to high amounts of clay<br>Characteristics: adult butterflies will only deposit eggs on species they recognize as host plants | Yes | No | **Low potential to occur.** The BSA contains some desert scrub habitat, however it exists in a disturbed state. In addition, the soils in the BSA do not contain a high clay faction; this species typically occurs in areas with clay-loam soils. The soils of the BSA are primarily loamy-fine-sand. |
| *Bombus crotchii* | Crotch bumble bee | candidate endangered | Habitats: grasslands and shrublands. Hotter and drier environment than other bumblebee species. Prefers milkweeds, dusty maidens, lupines, medics, phacelias, sages, clarkias, poppies, and wild buckwheats: This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There are few remaining native plants in the BSA. Due to these factors, there is low potential for the species to occur in the BSA. |
| **Listed Fish** | | | | | | |
| *Siphateles bicolor mohavensis (=Siphateles mohavensis, =Gila bicolor mohavensis)* | Mojave tui chub | FE, SE, fully protected | Habitats: weedy, near-shore areas of lakes, in the shallow areas of streams flowing out of lakes, and in mineral springs<br>Characteristics: needs vegetation for spawning | Yes | No | **No potential to occur**. There is no suitable habitat (wetlands) in the BSA that would support populations of the species. . |
| **Listed Amphibians** | | | | | | |
| *Anaxyrus californicus (=Bufo californicus)* | arroyo toad | FE, SSC | Habitats: sandy riverbanks, streams, washes, and arroyos, breeds in and near streams<br>Characteristics: nearby sandy terraces, dampened in places by capillary action, and with some scattered vegetation providing surface sheltering and burrowing sites and foraging areas | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Rana draytonii (=Rana aurora draytonii)* | California red-legged frog | FT, SSC | Habitats: lowland streams, wetlands and marshes, lakes, riparian woodlands, ponds, reservoirs, and other sources of permanent water<br>Characteristics: require cold water pond habitats with emergent and submergent vegetation | No | No | **Not expected to occur.** The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| *Rana muscosa* | southern mountain yellow-legged frog | FE, SE, CDFW:WL | Habitats: sunny riverbanks, meadow streams, isolated pools, lake borders, and rocky stream courses in the mountains of Southern California<br>Characteristics: prefer open stream and lake margins that gently slope | No | No | **Not expected to occur**. The BSA is located outside of the known distributional range of the species and does not contain breeding habitat (wetlands) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species. |
| **Listed Reptiles** | | | | | | |
| *Gopherus agassizii* | desert tortoise (=Mohave desert tortoise) | FT, ST | Habitats: desert scrub, creosote bush scrub, Mojave-saltscale scrub, desert wash, Joshua tree habitats and flat desert having sandy or gravelly soil, but occurs in almost every desert habitat except on the most precipitous slopes<br>Characteristics: avoid plateaus, playas, sand dunes, steep slopes and areas with many obstacles to free movement | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Charina umbratica* | southern rubber boa | ST | Habitats: moist oak-conifer and mixed-conifer coniferous forests and woodland habitats, large grassy fields or other open areas<br>Characteristics: require loose, moist soil for burrowing, rock outcrops serve as hibernacula | No | No | **No potential to occur.** The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. The soils in the BSA have been subjected to repeated surface disturbances likely prevent occupancy by the species. Due to these factors, there is no potential for occurrence of this species |
| **Listed Birds** | | | | | | |
| *Gymnogyps californianus* | California condor | FE, SE, fully protected | Habitats: semi-arid, pine or chaparral covered rugged mountain ranges, higher elevations, foraging habitat lies in foothills predominately covered by grasslands or oak-savannah habitats<br>Characteristics: habitat requirements may be adequate food supplies, open-enough habitat that food can be readily found and accessed | Yes | No | **No potential to occur.** The BSA does not contain adequate open habitat to support this species. In addition, suitable breeding habitats are absent from the BSA. This species is rarely detected in urbanized areas, and while the BSA and its surrounding vicniity contain some open space, this species is most likely to utilize the habitat provided by the San Bernardino and Angeles National Forests in the region rather than areas that have undergone some disturbance such as the BSA. |
| *Haliaeetus leucocephalus* | bald eagle | SE, fully protected, BCC, Season of Concern: nesting & wintering | Habitats: seacoasts, rivers, wetlands swamps, and large lakes, in winter in dense, sheltered, remote conifer stands<br>Characteristics: large nests are normally built in the upper canopy of large trees, usually conifers | Yes | No | **No potential to occur.** The BSA does not contain adequate large bodies of water, or free flowing rivers with abundant fish for foraging. In addition, suitable perching sites, roosting sites, and breeding habitats are absent from the BSA. Any occurrence would mostly likely be restricted to passage. |
| *Buteo swainsoni* | Swainson's hawk | ST, BCC | Habitats: large, open areas with abundant prey in association with suitable nest trees, native grasslands or lightly grazed pastures and croplands, open deserts, sparse shrub lands<br>Characteristics: nest in juniper trees of juniper-sage flats not near riparian zones | Yes | Yes | **Low potential to occur.** The BSA is located within the historical breeding range of the species, but breeding populations are likely extirpated from the region. The BSA supports marginal foraging and there is low potential for migrating or transient individuals to forage in the BSA. There is no potential for the species to nest within the BSA. |
| *Coccyzus americanus occidentalis* | western yellow-billed cuckoo | FT, SE,, BCC, | Habitats: relatively dense growths of trees and shrubs in riparian habitats that lines rivers and streams<br>Characteristics: Cuckoos have large home ranges, often exceeding 50 acres, and sometimes approaching 100 acres | Yes | No | **No potential to occur**. The BSA is located outside of the known distributional range of the species and does not contain habitat (forests) needed to support populations of the species. Due to these factors, there is no potential for occurrence of this species. |
| *Empidonax traillii extimus* | southwestern willow flycatcher | FE, SE, Season of Concern: nesting | Habitats: dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes, surface water, saturated soil, or herbaceous wetland plants present during the early summer months; woody riparian vegetation is present | Yes | No | **Not expected to occur.** The BSA does not contain habitat (riparian thickets) needed to support populations of the species. |
| *Vireo bellii pusillus* | least Bell's vireo | FE, SE, Season of Concern: nesting | Habitats: dry, intermittent streams, on the desert slopes mesquite (Prosopis sp.) and sandbar willow in canyon locations, willow-dominated riverine riparian habitats with well-developed overstories, understories, and low densities of aquatic and herbaceous cover | Yes | No | **No potential to occur.** The BSA does not contain suitable breeding and foraging riparian and aquatic habitats to support this species. Furthermore, the BSA lacks riparian habitat with well-developed understories and overstories. |
| **Listed Mammals** | | | | | | |
| *Xerospermophilus mohavensis (=Spermophilus mohavensis)* | Mohave ground squirrel | ST | Habitats: arid Mohave Desert of California<br>Soil: saltbush scrub, alkali desert scrub, desert scrub, creosote bush scrub | Yes | No | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| **Sensitive Wildlife: These animals have no official status under the ESA and/or the CESA; however they are designated as sensitive or locally important by federal agencies, state agencies, and/or local conservation agencies and organizations** | | | | | | |
| **Sensitive Invertebrates** | | | | | | |
| *Helminthoglypta taylori* | westfork shoulderband | Special Animals List | Habitat: talus and rock piles on mountain slopes<br>Characteristics: narrow endemic terrestrial snail from the desert foothills of the San Bernardino Mountains | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Plebulina emigdionis* | San Emigdio blue butterfly | Special Animals List | Habitats: arid washes, dry riverbeds, and intermittent streamsides as well as adjacent flats in lower Sonoran zone<br>Characteristics: flight time is from March through September. Hosts for caterpillars include Shadscale (*Atriplex canescens* ) | Yes | Yes | **Not expected to occur.** The BSA is in the known distributional range of the species, but the lands there have been subjected to repeated surface disturbances that likely preclude its occurrence. There is no shadscale scrub in the BSA. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Danaus plexippus* pop. 1 | monarch butterfly | FC: California overwintering population | Habitats: wind-protected tree groves (eucalyptus [Eucalyptus sp.], Monterey pine [Pinus radiata], cypress), with nectar and water sources nearby | Yes | No | **No potential to occur.** The BSA offers geerally poor wind protection. |
| **Sensitive Reptiles** | | | | | | |
| *Actinemys marmorata (=Actinemys marmorata marmorata) (=Emys marmorata)* | northern western pond turtle (=northern western pond turtle) | SSC | Habitats: stagnant or slow-moving water in aquatic habitats, ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Actinemys pallida (=Actinemys marmorata pallida)* | southern western pond turtle | SSC, BLMS, USFS: S, WRCMSHCP: Covered | Habitats: intermittent streams, small ponds, small lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and sewage treatment lagoons | No | No | **No potential to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| *Phrynosoma blainvilli (=Phrynosoma coronatum) (=Phrynosoma coronatum blainvillei)* | Blainville's horned lizard (=coast horned lizard) (=San Diego horned lizard) | SSC | Habitats: wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest, habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking | Yes | Yes | **Low potential to occur.** The BSA is in of the known distributional range of the species and contains sandy soils preferred by the species, but the soils there have been subjected to repeated surface disturbances. Due to these factors, there is low potential for the species to occur in the BSA. |
| *Thamnophis hammondii* | two-striped garter snake | SSC | Habitats: aquatic and it is rarely found far from water, permanent or semi-permanent bodies of freshwater and adjacent riparian habitat, oak woodlands, chaparral and coniferous forests on the coastal slopes of mountains and foothills to sea level | No | No | **Not expected to occur.** The BSA is outside of the known distributional range of the species and lacks habitat (wetlands) that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |
| **Sensitive Birds** | | | | | | |
| *Circus hudsonius (=Circus cyaneus)* | northern harrier | SSC | Habitats: northern harriers breed and forage in a variety of open (treeless) habitats, open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks | Yes | No | **Not expected to occur.** The BSA does not contain suitable foraging and breeding habitats to support this species such as , open wetlands, freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, fallow fields, ungrazed or lightly grazed pastures, some croplands (especially alfalfa, grain, sugar beets, tomatoes, and melons), sagebrush flats, and desert sinks. |
| *Accipiter cooperii* | Cooper's hawk | WL, Season of Concern: nesting | Habitats: broken woodland and habitat edges<br>Characteristics: tolerant of human activities near the nest and is seen more often nesting in urban/residential areas | Yes | Yes | **Low potential to occur**. This species has adapted to disturbed environments and human activity. There is marginal foraging habitat and low potential for this species to forage in the BSA. Due to a lack of suitable nesting habitat (trees) there is no potential for the species to nest in the BSA. |
| *Aquila chrysaetos* | golden eagle | fully protected, WL, BCC, Season of Concern: nesting and wintering | Habitats: mountainous canyon land, rimrock terrain of open desert and grassland areas, open rolling foothills of grasslands, oak savannas, oak and juniper woodlands, chaparral, mountain areas, and desert, open habitats including grasslands, deserts, savannahs, and shrublands<br>Characteristics: hilly or mountainous country, deeply cut canyons rising to open mountain slopes and crags are ideal habitat | Yes | Yes | **Not expected to occur.** This species is characteristic of remote, open areas and avoids human developments and activities. There is no suitable nesting or foraging habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Athene cunicularia* | burrowing owl | SSC, BCC, Season of Concern: burrowing sites and some wintering sites | Habitats: open, dry, flat ground or low rolling hills with sparse vegetation and available burrows<br>Characteristics: dig their own burrows in the soft banks of irrigation canals and ditches | Yes | Yes | **High potential to occur.** The BSA is in of the known distributional range of the species and contains friable soils and mammalian burrows (California ground squirrel) preferred by the species. This species is tolerant of human disturbances. Due to these factors, there is high potential for the species to occur in the BSA. |
| *Strix occidentalis occidentalis* | California spotted owl | SSC, BCC | Habitats: forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies (>70% canopy closure), multiple canopy layers, and downed woody debris<br>Characteristics: low elevations, it uses coastal oak woodland, valley foothill riparian, and redwood (Sequoia sempervirens) forests | Yes | No | **Not expected to occur.** The BSA does not contain suitable oak/conifer woodland or montane forest breeding, roosting, or foraging habitats to support this species. |
| *Asio otus* | long-eared owl | SSC Season of Concern: nesting | Habitats: conifer, oak, riparian, pinyon-juniper, and desert woodlands<br>Characteristics: long-eared owl appears to be more associated with forest edge habitat | Yes | Yes | **Not expected to occur.** There is no suitable foraging, roosting, or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |
| *Falco mexicanus* | prairie falcon | WL, BCC, Season of Concern: nesting | Habitats: annual grasslands to alpine meadows on open, dry, level or hilly terrain, perennial grasslands, savannahs, rangeland, some agricultural fields, desert scrub areas and even marshland and ocean shores<br>Characteristics: during the winter- reside in cultivated fields, lakeshores, desert scrub | Yes | Yes | **Low potential to occur.** The BSA does not contain suitable nesting habitat (rocky cliffs), and there is no potential for this species to nest in the BSA. There is marginal foraging habitat in the BSA, and there is low potential for this species to occur in the BSA as a forager., |
| *Lanius ludovicianus* | loggerhead shrike | SSC, BCC, Season of Concern: nesting | Habitats: agricultural fields, pastures with fence rows, old orchards, savannas, prairies mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs<br>Characteristics: nest in isolated trees or large shrubs | Yes | Yes | **Moderate potential to occur.** The BSA is in of the known distributional range of the species and contains potentially suitable nesting and foraging habitat (open habitat, Joshua trees). Due to these factors, there is moderate potential for the species to occur in the BSA. |
| *Vireo vicinior* | gray vireo | SSC, BCC | Habitats: arid, shrub-covered slopes in pinyon-juniper, juniper, and chamise-redshank chaparral habitats on foothills and mesas<br>Characteristics: they forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 feet above ground | Yes | Yes | **Not expected to occur.**The BSA is outside of the known breeding range of the species and does not support habitat (dense, shrubby vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Toxostoma lecontei* | Le Conte's thrasher | SSC, BCC | Habitats: open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub, Joshua tree habitats with scattered shrubs, open desert flats, washes and alluvial fans with sandy and/or alkaline soil<br>Characteristics: usually does not occur in areas of monotypic creosote bush scrub | Yes | Yes | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA. |

| *Scientific Name (=Synonym)* | **Common Name (=Synonym)** | **Status** | **General Habitat Descriptions in California** | **The BSA:** | | **Potential For Occurrence in the BSA** |
|---|---|---|---|---|---|---|
| | | | | **Located Within Species' Distribution and/or Elevation Range (if known)** | **Contains Suitable Foraging, Roosting, and/or Breeding Habitats** | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |
| *Setophaga petechia (=Dendroica petechia)* | yellow warbler | SSC, BCC, Season of Concern: nesting | Habitats: deciduous trees of the riparian woodland from coastal desert woodlands to the Sierra Nevada – willows (Salix sp.), cottonwoods (Populus sp.), aspens (Populus sp.), California sycamores (Platanus racemosa), and alders (Alnus sp.)<br>Characteristics: nests are deep cups, placed in an upright fork in a deciduous sapling or shrub, typically 2 to 16 feet high | Yes | No | **Not expected to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (riparian vegetation) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Icteria virens* | yellow-breasted chat | SSC, Season of Concern: nesting | Habitats: dense riparian thickets of willows, vines, and brush associated with streams and other wetland habitats<br>Characteristics: nest is an open cup placed in dense shrubs or thickets within 3 to 8 feet above ground along a stream or river | Yes | No | **No potential to occur**. The BSA is outside of the known breeding range of the species and does not support habitat (dense riparian thickets) needed to support breeding populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA. |
| *Piranga rubra* | summer tanager | SSC, Season of Concern: nesting | Habitats: desert riparian habitat, mature, dense, desert riparian habitat dominated by cottonwoods (Populus sp.) and willows (Salix sp.) along streams and rivers | Yes | | **Not expected to occur.** There is no suitable foraging or nesting habitat in the BSA. There is no potential for this species to occur in the BSA.. |
| **Sensitive Mammals** | | | | | | |
| *Chaetodipus fallax pallidus* | pallid San Diego pocket mouse | SSC | Habitats: sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California<br>Characteristics: mainly in arid coastal and desert border areas | Yes | No | **Not expected to occur**. The BSA is in of the known distributional range of the species and contains sandy soils, but the soils there have been subjected to repeated surface disturbances. There is a lack of natural vegetation and rocky or gravelly inclusions in the soil that is preferred by this species. Due to these factors, there is no potential for the species to occur in the BSA |
| *Microtus californicus mohavensis* | Mohave river vole | SSC | Habitat: grassy or riparian habitats within the Mojave River corridor<br>Characteristics: inhabits areas of infrequent flooding | Yes | No | **Not expected to occur.** The BSA does not support habitat (riparian) needed to support populations of the species. Due to these factors, there is no potential for the species to occur or nest in the BSA |
| *Lasiurus cinereus* | hoary bat | ND | Habitats: near open grassy areas in coniferous and deciduous forest or near lakes, open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding<br>Characteristics: winter roosts include sides of buildings and tree trunks | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA.. |
| *Vulpes macrotis arsipus* | desert kit fox | Protected by Section 460 of the California Code of Regulations [CCR], Title 14 | Habitats: sparsely vegetated scrub habitats and native or annual grasslands, alkali sink scrub, saltbush scrub, and chenopod scrub, although oak woodlands, vernal pools, alkali meadows and playas also provide habitat<br>Characteristics: located on gradual west to northwest facing slopes, with characteristically deep, light-textured and virtually stoneless soils | Yes | No | **Low potential to occur**. The BSA contains low-quality foraging habitat for this fox, however occurrence of this species in the BSA would likely be restricted to passage and/or occasional foraging. There is a lack of suitable, undisturbed breeding habitat for this species as the BSA frequently experiences various disturbaces including human activity, vehicle traffic, and soil compaction, |
| *Taxidea taxus* | American badger | SSC | Habitats: alpine meadows to elevations as low as Death Valley<br>Characteristics: requirements - sufficient food, friable soils, and relatively open, uncultivated ground | Yes | No | **Not expected to occur.** The BSA is in of the known distributional range of the species, but it does not contain habitat that would support populations of this species. Due to these factors, there is no potential for the species to occur in the BSA. |

***Legend and Notes***

***Federal Endangered Species Act (ESA) Listing Codes: the ESA is administered by the USFWS and NMFS. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. The official federal listing of Endangered and Threatened animals is published in 50 CFR § 17.11.***

- **FE** = federally listed as endangered: any species of plant or animal that is in danger of extinction throughout all or a significant portion of their range.
- **FT** = federally listed as threatened: any species of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future.
- **FC** = federal candidate for listing: candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them for listing as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by higher priority listing actions to address species in greater need. A proposed regulation has not yet been published in the Federal Register for these species.
- **FPE** = federally proposed for listing as endangered: a candidate species that has been proposed by USFWS or NMFS for listing as endangered and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPT** = federally proposed for listing as threatened: a candidate species that has been proposed by USFWS or NMFS for listing as threatened and the proposed rule, but not a final rule, to list has been published in the Federal Register.
- **FPD** = federally proposed for delisting: a species that has been proposed by USFWS or NMFS for delisting (or down listing from endangered to threatened) and the proposed rule to delist has been published in the Federal Register.

***California Endangered Species Act (CESA) Listing Codes: the CESA is administered by CDFW. The official listing of Animals of California Declared To Be Endangered or Threatened is contained in the California Code of Regulations, Title 14, § 670.5. Species and subspecies of California native animals are declared to be endangered or threatened as defined by §§ 2062 and 2067 of the Fish and Game Code.***

- **SE =** state-listed as endangered: "endangered species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish and Game Code § 2062).
- **ST** = state-listed as threatened: "threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts (Fish and Game Code § 2067).
- **SCE** = state candidate for listing as endangered: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for addition to the list of endangered species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCT** = state candidate for listing as threatened: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed by publication in the California Regulatory Notice Register as being under review by CDFW for addition to the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to add the species to the list (Fish and Game Code § 2068).
- **SCD** = state candidate for delisting: a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed published in the California Regulatory Notice Register as being under review by CDFW for removal from either the list of endangered species or the list of threatened species, or a species for which the Fish and Game Commission has published a notice of proposed regulation to remove the species to either list.

***California Department of Fish and Wildlife (CDFW) Designations:***

For some wildlife species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nesting colonies. For many species of birds, the primary emphasis is on the breeding population in California. For some species which do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering

- **SSC = species of special concern**: a species of special concern is a species, subspecies, or distinct population of an animal (fish, amphibian, reptile, bird and mammal) native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria: is extirpated from the state or, in the case of birds, in its primary seasonal or breeding role; is listed as federally-, but not state-, threatened or endangered; meets the state definition of threatened or endangered, but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- **Fully protected:** fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Lists were created for fish (Fish and Game Code § 5515), amphibians and reptiles (Fish and Game Code § 5050), birds (Fish and Game Code § 3511) and mammals (Fish and Game Code § 4700).
- **WL = watch list**: this list includes birds identified in the California Bird Species of Special Concern (Shuford and Gardali, 2008) report and are not on the current CDFW species of special concern list, but were on previous lists and they have not been state-listed under CESA; were previously state or federally listed and now are on neither list; or are on the list of fully protected species.
- **Special Animals List**: The Special Animals List contains taxa that are actively inventoried, tracked, and mapped by the CNDDB, as well as taxa for which mapped data may not yet be incorporated into CNDDB user products

***United States Fish and Wildlife Service (USFWS) Designations:***

- **FSC = federal species of concern**: federal species of concern is an informal term. It is not defined in the ESA. The term commonly refers to species that are declining or appear to be in need of conservation.
- **BCC = bird of conservation concern**: a bird of conservation concern is listed in the USFWS' 2008 Birds of Conservation Concern report. The report identifies species, subspecies, and populations of all migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that, without additional conservation actions, are likely to become candidates for listing under the ESA. While all of the bird species included in the report is priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing.

| *Scientific Name (=Synonym)* | Common Name (=Synonym) | Status | General Habitat Descriptions in California | The BSA: | | Potential For Occurrence in the BSA |
|---|---|---|---|---|---|---|
| | | | | Located Within Species' Distribution and/or Elevation Range (if known) | Contains Suitable Foraging, Roosting, and/or Breeding Habitats | |
| **Listed Endangered, Threatened, and Candidate Wildlife: Wildlife with official status under the federal Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA). A species may have other sensitive designations in addition to their federal or state listing.** | | | | | | |

***Western Bat Working Group (WBWG) Designations:***
The WBWG is composed of agencies, organizations, and individuals interested in bat research, management, and conservation from 13 western states and provinces. Species are ranked as High, Medium, or Low Priority in each of 10 regions in western North America.
•**H = High Priority:** These species are considered the highest priority for funding, planning, and conservation actions, Information about status and hreats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment.
•**M = Medium Priority:** These species warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

***Resources***

• *Check-List of North American Birds, 7th edition (AOU, 1998);*
• *(AOU website );*
• *Amphibian species accounts (Amphibiaweb website );*
• *Terrestrial Mammal Species of Special Concern in California (Bolster, 1998);*
• *Mammals of North America (Bowers et al., 2004);*
• *Special Status Animals in California, Including BLM Designated Sensitive Species (BLM, 2010);*
• *Life History Accounts and Range Maps (CDFG, 1988a and updates; CDFG, 1988b and updates; CDFG, 1988c and updates);*
• *The Status of Rare, Threatened, and Endangered Plants and Animals of California, 2000–2004 (CDFG, 2005);*
• *Atlas of the Biodiversity of California (CDFG, 2003);*
• *RareFind, CDFW, California Natural Diversity Database (CNDDB );*
• *State & Federally Listed Endangered & Threatened Animals of California (CDFW, 2016);*
• *Special Animals List (CDFG, 2016);*
• *CDFW's California Wildlife Habitat Relationships: Online Life History Accounts and Range Maps ;*
• *California Herps website ;*
• *California Partners in Flight website ;*
• *CNAH website ;*
• *AOU supplement (Chesser et al., 2015);*
• *A Field Guide to Hawks of North America, Second Edition (Clark and Wheeler, 2001);*
• *Mammals of California (Eder, 2005);*
• *Fairy Shrimps of California's Puddles, Pools, and Playas (Eriksen and Belk, 1999);*
• *Atlas of Breeding Birds, Orange County, California (Gallagher, 1997);*


***Notes:***
•***Yes*** *= the BSA is located within the wildlife species' known distribution, elevation range, and/or the BSA contains suitable habitats or conditions to support the species. The wildlife species has a potential to occur within the BSA. Further evaluation is needed.*
•***No*** *= the BSA is located outside the wildlife species' known distribution, elevation range, and/or the BSA lacks suitable habitats or conditions to support the species. It is highly unlikely for the wildlife species to have a potential to occur within the BSA. No further evaluation is needed.*
•***Present*** *= observed within the BSA during surveys.*
•***Elevation:*** *The BSA contains elevations ranging from approximately 3,606 to 3,620 feet above mean sea level (amsl; Google Earth, 2022).*

# APPENDIX D1

# CULTURAL RESOURCES ASSESSMENT

# PHASE I
# CULTURAL RESOURCES INVENTORY
# FOR THE
# CARGO SOLUTIONS TRUCK WAREHOUSE
# CITY OF HESPERIA
# SAN BERNARDINO COUNTY, CALIFORNIA

***Prepared for:***
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**September 25, 2024**

Key Words: City of Hesperia; San Bernardino County; *Baldy Mesa, Calif*. USGS Quad.; Serrano tribe; Positive Results; Historical Resources

# PHASE I
# CULTURAL RESOURCES INVENTORY
# FOR THE
# CARGO SOLUTIONS TRUCK WAREHOUSE,
# CITY OF HESPERIA,
# SAN BERNARDINO COUNTY, CALIFORNIA

**Cargo Solutions**
**Attention: Express Bobby Kang, Owner**
**14587 & 14589 Valley Boulevard**
**Fontana, CA 92335**

## September 25, 2024

Reviewed by: _____ Date: September 25, 2024

Stephen O'Neil, M.A., RPA
UltraSystems Environmental Inc.

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## ATTACHMENTS


**Attachment A** Project Maps

**Attachment B** Personnel Background

**Attachment C** Native American Heritage Commission Records Search

**Attachment D** CHRIS Records Search

**Attachment E** **CONFIDENTIAL** DPR Continuation Sheet - CRM TECH 3937-1H

# 1.0 INTRODUCTION

## 1.1 Overview

This Phase I Cultural Resources Inventory report was prepared by UltraSystems Environmental (UEI) at the request of Cargo Solutions Express, Inc. This study is for the Cargo Solutions Warehouse in the City of Hesperia.

The proposed project includes the development of two truck warehouse buildings with associated parking spaces, loading docks, tractor-trailer stalls, and landscaped areas. The project area covers approximately 19 acres of vacant land. It is situated on APN parcels 3064-631-01, 3064-591-13, 3064-591-12, 3064-591-17, and 3064-591-18, The project site is located in the west-central portion of Hesperia east of U.S. Route 395 and west of the Interstate 15 (I-15) Barstow Freeway. UEI conducted this cultural resources study to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The project is located in the City of Hesperia (see **Attachment A, Figure 1** and **Figure 2)**, and is specifically located south of Poplar Street, east of Three Flags Avenue, and west of I-15, and can be seen on the *Baldy Mesa, Calif*., USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼ of Section 22 (see **Attachment A, Figure 3).** The background research and archival study included a one-half mile buffer surrounding the project site (see **Attachment A, Figure 3).** The project is located in a developing area in the western portion of the city and is surrounded by vacant, undeveloped desert land, as well as commercial/industrial properties.

### 1.1.1 Area of Potential Effect

The Area of Potential Effect (APE) for the undertaking encompasses the maximum extent of ground disturbance required by the project design (see **Attachment A**, **Figure 2**). The surface area of the APE is approximately 19.22 acres. All of this area is subject to direct ground disturbances during construction.

## 1.2 Methods

A cultural resources records search was completed at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, which is the local California Historic Resources Information System (CHRIS) facility. The records search was conducted to identify previously recorded cultural resources (prehistoric and historic archaeological sites/isolates, historic buildings, structures, objects, or districts) within the project area and also to determine previous cultural resource surveys. The project site and a 0.5-mile buffer zone are included in the search radius for archival studies. These records included a review of previously recorded prehistoric and historic archaeological resources and a review of listed cultural resource survey reports within that same geographical area. The cultural resources record search was conducted by Megan B. Doukakis, M.A, Assistant Project Archaeologist.

Stephen O'Neil, M.A., RPA, who qualifies as a Principal Prehistoric Archaeologist and Historic Archaeologist per United States Secretary of the Interior Standards (see **Attachment B**), contacted the Native American Heritage Commission (NAHC) requesting a Sacred Lands File (SLF) search and

contact information of local Native American tribes. Ms. Doukakis and Brent Johnson, M.A., contributed to this report.

## 1.3 Disposition of Data

This report will be filed with the SCCIC, California State University, Fullerton; the City of Hesperia Planning Department; and UltraSystems Environmental, Inc., Irvine, California. All field notes and other documentation related to the study will remain on file at the Irvine office of UltraSystems.

# 2.0 SETTINGS

## 2.1 Natural Setting

The City of Hesperia is one of four incorporated cities in the Victor Valley region of San Bernardino County. The city is located in the transitional area between the foothills of the San Bernardino Mountains to the south and the Mojave Desert to the north and is situated in a geomorphic province on volcanic rock with upper soils characterized by light to dark brown silty sand. The region's environment is characterized as a high desert due to its weather pattern and elevation of over 3,260 feet. The summers are hot and arid with the average daily temperature above 87 degrees Fahrenheit (° F), while the winters are cold and partly cloudy with average daily temperature of 64° F. Rainfall is typically 14.9 inches annually, most of which occurs between November and March.

The project site is located in the Mojave Desert, approximately nine miles south of the Mojave River and 3,500 feet east of the Oro Grande Wash. It is situated at an elevation ranging from 3,600 feet at the northeast corner to approximately 3,622 feet at the southwest corner, with a gentle slope to the northeast.

The Mojave Desert characteristically exhibits the grey-green shrubs of the creosote bush (*Larrea tridentata*) with areas exhibiting alkaline soils containing expressions of saltbush (*Atriplex* spp.). Plant species present in the general vicinity of the Project site include: juniper (*Juniperus californica*), annual bursage (*Ambrosia acanthicarpa*), Nevada jointfir (*Ephedra nevadensis*), bladder sage (*Scutellaria mexicana*), rabbitbrush (*Ericameria nauseosa*), and Joshua tree (*Yucca brevifolia*). Other plants noted in the area include saltbush (*Atriplex* sp.), schismus (*Schismus barbatus*), cholla (*Cylindropuntia echinocarpa*), bunchgrass (*Phleum pratense*), white bursage (*Ambrosia dumosa*), California buckwheat (*Eriogonum fasciculatum*), and brome grasses (*Bromus* sp.).

Typical Mojave Desert fauna include: bighorn sheep (*Ovis canadensis*), mule deer (*Odocoileus hemionus*), jackrabbit (*Lepus californicus*), cottontail, coyote, pronghorn, various reptiles (including the venomous Mohave rattlesnake and the notable chuckwalla) and rodents. Other animals include various species of waterfowl and numerous birds.

The project site boundary is underlain by Hesperia Loamy Fine Sand which is derived from parent material of granite alluvium. The soils are well drained with a depth of more than 80 inches to a restrictive feature, and the slope is two to five percent (The soil composition is based on observations, descriptions, and transects of the man unity) (USDA Web Soil Survey).

Geological features of the Mojave Desert Basin and Range geomorphic province are comprised of broad alluvial basins, and moderate relief mountain ranges and hills that consist primarily of Mesozoic granitic and Mesozoic to Precambrian metamorphic rocks. Cenozoic sedimentary and volcanic rocks and landforms are also common (PlaceWorks and Dudek 2017).

## 2.2 Cultural Setting

### 2.2.1 Prehistoric Context

Synthetic treatments of the prehistory of the Mojave Desert include topical studies by Basgall (1993), Basgall and McGuire (1988), Garfinkel (2007), Garfinkel et al. (2010), Gilreath and Hildebrandt (1997), Lengner (2013), Sutton et al. (2007), Van Tilburg et al. (2012), Warren (1984), Warren and Crabtree (1986), Whitley (1998), and Yohe (1992).

The Mojave Desert has seen more archaeological study than many other areas of California. It has also spawned some of the most contentious dialogues in professional archaeology with respect to competing prehistoric cultural sequence models. Given the importance of chronological controls, the prehistoric cultural sequence and related temporal periods remains an important topic for continuing research.

**Cultural Sequence**

**Late Pleistocene: Paleo-Indian / Western Clovis Period**

The Clovis (aka Western Clovis) cultural complex is generally considered to be the dominant prehistoric occupation during the Late Pleistocene era. Clovis points and their associated cultural materials have been the focus of intensive study and the general consensus is that they date from about 13,500 to 12,500 calibrated radiocarbon years (cal) before present (BP) (cf. Goebel et al. 2008; Waters and Stafford 2007).

Although the Mojave Desert has seen early claims of great human antiquity, even Clovis-like fluted points discoveries themselves are fairly rare (cf. Rondeau et al. 2007). Besides the limited discoveries of fluted points, we have little in the way of related diagnostic elements of Clovis technology that would provide a more complete picture of the entire archaeological assemblage.

**Early Holocene: Mojave or Lake Mojave Period**

Significant environmental changes occurred in the post-Pleistocene resulting in the infilling of valleys and basins by streams, marshes, and lakes from increased glacial runoff. During this time there exists a well-established and wide-ranging prehistoric tradition in the Mojave Desert dating from ca. 12,000 to 8,000 cal BP with a hunting emphasis on lakeshore resources (cf. Bedwell 1970; Warren 1967, 1986; Warren and Crabtree 1986).

Milling equipment, although evidently only a minor element in the Lake Mojave archaeological assemblages, is also a regular part of the documented cultural materials at sites attesting to a wider range of habitats for sites outside of lakeshore settings (Basgall 1993).

**Middle Holocene: Little Lake or Pinto Period**

In the Middle Holocene from ca. 8,000 to 4,000 cal BP temperature and aridity peaked. Lowland bodies of water shrank in size, associated plant communities dwindled and, with the exception of certain rare refuge areas, human land use shifted to upland areas (Sutton et al. 2007). Correlating with these changes was the inception of a cultural expression known as the Pinto Complex.

The presence of ground stone implements signals a growing emphasis on small seed use. Since hunting equipment persisted during this time frame, Claude Warren and others (Warren 1967, 1984, 1986) have suggested that large game procurement continued despite deteriorating climatic conditions and declining big game populations. Heavily worn stone tools crafted from exotic stone suggests that prehistoric Middle Holocene Natives were still highly mobile.

**Middle/Late Holocene: Newberry Period or Gypsum Complex**

In the Late Holocene, beginning ca. 4,000/3,500 cal BP and continuing to about 2,000 cal BP, significant interregional variability in aboriginal land use is recognized. Cool winters and relatively

wet intervals were characteristic of what is known as the Neo-Pluvial Period that occurred between 4,000 and 2,000 radio carbon years before present (rcybp) (Wigand and Rhode 2002).

Radiocarbon assays and obsidian tool/debitage sources in the Mojave Desert suggest that particular sites were seasonally re-occupied (Basgall and Hall 1992, 1994). From food remains one may infer that logistical forays were made to long-distance upland settings to procure specialized resources (pinyon nuts, bighorn sheep, and marmots) that were brought back to a base camp (Basgall and Delacorte 2012; Basgall and McGuire 1988; Byrd and Hale 2003). Warren et al. (1984) identify a change in social organization from the smaller family-band units in earlier eras to multi-family groups.

**Late Holocene: Haiwee, Rose Spring, Saratoga Springs Period**

The Mojave Desert witnessed a significant series of adaptation shifts beginning in this time period (ca. 2000 to 700 cal BP). During the onset of the period a dramatic set of subsistence-settlement changes were documented. These changes include: the introduction of the bow and arrow replacing the dart and atlatl, a dramatic decrease in large game hunting, increased reliance on dryland hard seeds, the beginning of intensive green-cone piñon pine nut exploitation, and the development of sites emphasizing the acquisition of easily procured and abundant small game animals (especially with respect to large numbers of lagomorphs and grebes). These cultural changes may reflect a Numic (Great Basin Paiute-Shoshone) in-migration. Certain technological innovations and labor-intensive adaptive strategies are also broadly consistent with those of the intrusive Numic groups (Bettinger and Baumhoff 1982; Delacorte 1994, 1995).

**Recent Holocene: Marana, Late Prehistoric**

This final cultural period (700 cal BP to the historic) represents the ethnographic occupation of the Mojave Desert by the Kawaiisu, Panamint Shoshone, Serrano, Chemehuevi, and Mohave, with the Tataviam and Alliklik utilizing the western margin of the Desert. Desert Side-notched and Cottonwood arrow points, brownware ceramics, imported soapstone beads, pictographs, and many sites associated with systematic and intensive upland piñon exploitation are all characteristic of this time frame (Bettinger 1978; Garfinkel et al 1980; McGuire and Garfinkel 1976, 1980).

Resource intensification that began in the prior period continued and strengthened with settlements tied to seasonal differences in resource availability. Region-wide expansion of diet breadth, including an increase in desert tortoise and reptile use, and intensification of small seed resources involved a change in the technology used in the collection and processing of these resources. This pattern began about 1300 cal BP but increased substantially throughout the Late Prehistoric (650 cal BP – Contact) and into the Protohistoric era.

Evidence of increased contact with outside populations (e.g., the American Southwest) and the expansion of Numic-affiliated populations out of eastern California into most areas of the Great Basin and much of the Mojave Desert are recognized during the last 1,000 years (Fowler 1972; Lamb 1958).

Geospatial analyses of known prehistoric sites in inland Southern California suggest that longer-term residential settlements of the Native population were more likely to occur in sheltered areas. Such locations were near the base of hills and/or on elevated terraces, hills, and finger ridges. Further, these favored locations were near permanent or reliable sources of water. These were areas that were largely level encampments situated on the unprotected valley floor. The residential sites were used for resource procurement and travel. The use of such geographical settings is supported by the

ethnographic literature. These reports identify the foothills as preferred areas for settlement (Bean and Smith, 1978a; 1978b). The project area is situated on open desert land with no hills nearby, with a major wash to the northwest, a suitable location for prehistoric seasonal camp sites.

### 2.2.2 Ethnohistoric Context

The western Mojave Desert was home to groups of Northern Uto-Aztecan speakers, primarily the Serrano (Vanyume), with the Kitanemuk, Tataviam, and Kawaiisu in the Antelope Valley portion to the northwest . The groups traded and interacted with each other. Additionally, each group had its own trade and alliance relationships with other groups who lived outside the valley.

Recent research by Earle (1990, 1997, 2004a, 2004b, 2005a, 2005b), King (2003), and Johnson and Lorenz (2006) have helped to clarify the ethnic identification of the Mojave Desert Native American groups. Their work with the John Peabody Harrington field notes, combined with analysis of the Franciscan mission sacramental registries, testify that the Mojave Desert dwellers in the Hesperia area were speakers of a dialect of Serrano. Surviving vocabularies and word lists support the identification of desert groups known as Vanyume (Garcés' term was Beñeme) as related to the Serrano. It has been further determined that Native groups occupying villages on the Mojave River in the vicinity of Victorville immediately north of Hesperia and in the region east of Barstow maintained marriage ties to downriver communities and were also Vanyume in ethnic and linguistic affiliation. Earle (1990, 1997) supports King's revisions of earlier territorial boundaries asserting that Serrano territory included the northern slopes of the San Gabriel Mountains, the Mojave River, and Antelope Valley. It also appears from their research that both the south and north slopes of the San Gabriel Mountains were "owned" and occupied by Serrano speakers.

Early 20th century ethnographic fieldwork among the Serrano was conducted by Kroeber (1925), Gifford (1918), Strong (1929), Benedict (1924), and Harrington (1986). More recent research by Bean (1972), Bean and Smith (1978), and Bean, et al. (1981) has helped to focus attention on key research questions in an attempt to clarify the relationship of Serrano land use patterns, territorial attributions, subsistence-settlement patterns, and social, ceremonial, and political organization.

The economic resource base of the Vanyume was determined in part by the seasonal availability of key animals and plants exploited for basic subsistence (Earle 1992). Hunting activities supplemented a diet mainly emphasizing plants. Hunting excursions were both an individual affair but also incorporated communal drives, and trap lines to snare small animals (e.g., squirrels, rodents, tortoise, and chuckwalla). Some desert hunting areas to the east in the Mojave Desert and in the vicinity of the Mojave River may have been shared with adjacent groups (e.g., Chemehuevi and/or Mojave). Mule deer were available in the San Gabriel Mountains. Deer would migrate to lower elevations during the winter and would be available in the lower foothill region at that time. Pronghorn frequented the valley floor year-round but were not consistently abundant and were hunted only occasionally using communal surrounds and group drives. The latter communal drive technique was also used to ensnare large numbers of jackrabbits during the fall when the rabbits were especially abundant. Mountain sheep were available in the higher mountains but would only have been rarely procured. Waterfowl could be captured using bows and arrows and special nets. Ducks, quail, geese, and grebes would have been available in considerable numbers during their breeding seasons and in association with riparian settings.

Abundant stands of acorns, juniper, mesquite, and pinyon were available to extended gathering expeditions into the mountains. These might involve several lineages collaborating under one leader's authority and would have entailed accessing the resource base of surrounding groups (Bean and Smith 1978; Benedict 1924:391-392; Drucker 1937). Cattail / bulrush seeds (*Typha* spp. and

*Scirpus* spp.), various roots, shoots, bulbs, and other hard seeds were all principal plant foods. The most likely plant resources that were of significant economic importance that have been identified paleobotantically or noted in the immediate vicinity of the Project were Indian rice grass (*Achnatherum hymenoides*), chia (*Salvia columbariae*), blazing star (*Mentzelia* spp.), and goosefoot (*Chenopodium* spp.)

Edward W. Gifford conducted a detailed study of the marriage practices and sociopolitical organization of native southern California Native Americans from 1916 through 1917 (Gifford 1918). Based on these studies, he developed a model of Serrano social organization (Earle 2004a, 2004b). William Duncan Strong (1929: 5-35) conducted even more extensive social organization studies among the Serrano, Cahuilla, Luiseño, and Cupeño in 1925. Strong indicated that the Serrano were an unusual California group in that they possessed true patrilineal clans and an active moiety system. Patrilineal clans are patterned such that all males, their descendants, and their wives were part of a single group. Clans may be segmented into subclans or lineages. A woman retained her own lineage name but upon marriage was incorporated into the clan of her husband. The transfer of women from one ceremonial affiliation with one clan to another, upon marriage, was characteristic of all southern California Takic (the linguistic subfamily of Northern Uto-Aztecan) speaking groups. In the Serrano case, their society was divided into two parts identified with either Coyote or Wildcat. The Coyote moiety had the most important political leaders. Moiety out-marriage excluded partners from half the neighboring Serrano settlements. Hence, only settlements of opposing moieties were interrelated through marriage.

Serrano villages in the Mojave Desert were generally more dispersed than in the mountain setting. This dispersed pattern resulted in marriages linking together very large areas. Many of the settlements had marriage ties with villages over 50 miles away and counter intuitive was the fact that the closest relationships were not with the nearest villages – but rather with settlements affiliated with opposing moieties further distant. King's study of the mission registers indicates that there were many important hereditary positions among the Serrano recognizable in name identities. Each village contained a chief, ceremonial manager, two messengers, as well as various shamans, diviners, and other ritual specialists. Each of these leaders oversaw different elements of Serrano life involving festivals, dances, and warfare.

Ethnographic data attests that a major native trade and travel corridor facilitated a long-distance exchange system. Recent research has supported the importance of long-distance trade linking coastal southern Californian Chumash tribes with inland groups including the Yokuts, Kawaiisu, Serrano, Chemehuevi, and the Mojave in California, and with the Walapai, Havasupai, and Hopi in Arizona (Earle 2005a). Shell bead trade was one of the mediums of exchange and was used as a kind of currency or money. This system was significant since it involved trade, travel, and exchange covering hundreds of miles and was a system of exchange of native goods that linked various ethnic groups politically and economically. This trade and travel route ran from the American Southwest (principally the Hopi territory in Arizona), along the Colorado River to the Mojave River thence through the central Mojave Desert into the Antelope Valley (Serrano territory) and west to the Pacific Coast (Davis 1961; Farmer 1935; Sample 1950). These circuits of exchange cut across political and cultural boundaries. A number of researchers have argued that such an exchange system may have been an influential factor in facilitating semi-sedentary settlement and complex sociopolitical organization for the Serrano (Earle 2005a; Robinson 1977; Sutton 1980).

### 2.2.3 Historic Context

#### 2.2.3.1 Spanish/Mexican Era

The first known European explorer to pass through the Hesperia region of the Mojave Desert was Lt. Pedro Fages, an officer of the Spanish Army. While tracking military deserters in 1772 he entered the desert through the Cajon Pass and traveled northward along the eastern edge of the San Gabriel Mountains, through the southern edge of the Mojave Desert, the Hesperia region and onto what is now western Palmdale, and then up to Elizabeth Lake before returning to the coast. Soon afterwards, Franciscan Fr. Garcés, starting from Arizona with the de Anza expedition of 1775, split from the expedition at the Gila River crossing along the Colorado River and headed north on his own through the Mojave Desert. He reached Mission San Gabriel the following year and his route became the Mojave Trail. Despite these early visits, for the next 40 years this inland valley received little impact from Spanish colonization activities, which were concentrated along the coast.

Mission San Gabriel, founded 1772, became the primary missionizing force in the south and central Mojave Desert, baptizing members of the Serrano tribe. When Mission San Fernando was established farther north in 1797, the priests here proselytized in the western and northern Mojave Desert bringing in members of the Tataviam, Kitanemuk and Alliklik tribes. Spanish rule was overthrown by Mexico in 1812, and the missions lost their land holdings to private ranchos as the Mexican government passed the Secularization Act in 1833 (Beattie and Beattie 1951). The notable Old Spanish Trail was established between southern California and Santa Fe, New Mexico in the 1830s (Beck and Haase 1974).

For most of the Spanish-Mexican Period, the entire San Bernardino Valley below the Cajon Pass into the desert was considered a part of the land holdings of Mission San Gabriel. The name "San Bernardino" was bestowed on the region circa 1819, when the mission *asistencia* and an associated rancho were officially established under this name in the eastern area of the valley (Lerch and Haenszel, 1981). Spanish rule was overthrown by Mexico in 1812, and the missions lost their land holdings as the Mexican government passed the Secularization Act in 1833 (Beattie and Beattie 1974). The notable Old Spanish Trail was established between southern California and Santa Fe, New Mexico in the 1830s (Beck and Haase 1974). In 1848, when the southwest was ceded to the United States, most of the Mexican land grants became areas of public domain, and raising livestock gave way to agriculture (Schuiling 1984).

#### 2.2.3.2 The American Period to Founding of Hesperia

In 1851, Mormons settled in the San Bernardino Valley when Brigham Young asked church followers to start a new colony in California (Beattie and Beattie 1951, Lyman 1996). The Mormons traveled 400 miles from Salt Lake City to San Bernardino along a route that came to be known as "the Mormon Trail." The last leg of the trip required navigating the Cajon Pass out of the desert in the San Bernardino Mountains before descending into the San Bernardino Valley. The Mormons had made plans to purchase the Chino Ranch from Isaac Williams. However, he had changed his mind about selling it when they arrived (Schuiling 1984, Lyman 1996), and they purchased a large portion of José del Carmen Lugo's Rancho San Bernardino along the Santa Ana River. Because of the debt that the purchase of this land created and the need to demonstrate to church leaders in Salt Lake City that the colony was productive, the Mormons quickly developed crop cultivation in the valley and lumbering in the foothills of the San Bernardino Mountains. Lumber was such an important cash commodity that it was called the "Mormon currency" (Schuiling 1984: 45). The Mormons also planted fruit trees and vineyards and built a flour mill. The Mormons were instrumental in establishing San Bernardino

County in 1851 and the city of San Bernardino in 1854. However, when Brigham Young recalled the settlers to Salt Lake City in 1857, two-thirds of the original settlers abandoned the settlement, and the community began to develop in ways quite different from its original founding. Beattie and Beattie (1951) detail some of the changes after the Mormon exodus, such as an increase in crime. Lyman (1996) notes that the peaceful coexistence of the Mormons with the surrounding Indian tribes changed after the Mormon exodus, among other results being the further displacement of the Cahuilla and Serrano tribes.

In the late 1800s, the railroad came to San Bernardino County. Fierce competition between the Southern Pacific and Santa Fe lines led to price wars, which enabled many settlers from the Northeast and Midwest to be able to afford the long journey west. Southern Pacific had a monopoly in the county for a long time until Fred T. Perris surveyed the Cajon Pass, which allowed the Santa Fe Railway Company to link San Diego, San Bernardino, and Barstow by rail and thus break the monopoly. Cheap railroad transportation led to a land boom in the 1880s. In the 1870s and afterwards, small towns in the high desert region and near the Calico Mountains were established as railway stops on the Santa Fe Railroad (Kyle 1990). Approximately 30 new communities were established. Only about half have survived to the present day (Schuiling 1984). The growing population created a demand for a reliable source of water, which would lead to the further development of this arid region. The construction of the Bear Valley dam in 1884 created Big Bear Lake, which secured the future of the San Bernardino Valley as a place where people and agriculture could flourish with the impounded surface runoff from the winter snowpack. Replicating the success of the Bear Valley dam, Lake Arrowhead was completed in 1915.

In 1849, the Gold Rush was on and the discovery of gold in the San Bernardino Mountains brought an influx of miners to the area. Later, in the Mojave Desert to the northern and eastern portions of San Bernardino County, silver mining took precedence as gold was mined out, and then borate mining replaced silver mining. Mining continued as an important part of the county's economic base into the 20th century (Schuiling 1984).

World War II brought the beginning of a strong military presence in the county. Before World War II there were no permanent military installations in the area with the exception of March Field in neighboring Riverside County. Military installations established in San Bernardino County include the Mojave Anti-Aircraft Range in northern San Bernardino County; Fort Irwin training base near Barstow; the San Bernardino Air Depot of the Air Material Command, which became Norton Air Force Base in 1950; the Defense Supply Agency of the Department of Defense; 29 Palms Marine Base; George Air Force Base, which was a training facility for fighter pilots; and the navy bombing range at China Lake in the northwest part of the county, which expanded in 1943 and became the 750,000-acre Naval Ordnance Training Station that also lies partly in Kern and Inyo Counties (Schuiling 1984).

**History of Hesperia**

In 1869, Max Stobel purchased 35,000 acres along the Mojave River from the United States Government Land Office for $40,000. While several attempts were made to subdivide the land and encourage colonization, the area was primarily used for agricultural purposes, with raisin grapes being the primary crop (Yetzer 1988). A major turning point occurred in 1885, when the Atchison, Topeka and Santa Fe railroad tracks were completed, and the Hesperia Train Station was erected in 1887. The Hesperia railhead created the city's first major industry, which was the export of Juniper wood, used by Los Angeles bakers to fuel their breadmaking kilns (City of Hesperia 2022).

It was shortly after developer Robert M. Widney purchased a large parcel of this land in 1886 that work on the Hesperia Hotel began. In 1874 Widney had begun the first successful public rail transit company in Los Angeles, building a 1.5 miles (2.4 km) horse drawn trolly line between Los Angeles Plaza and 6th Street at Pearl Street. As one of most successful developers of his time, as well as District Judge for Los Angeles and San Bernadino Counties, founder of Los Angeles Chamber of Commerce and one of the founding members of the University of Southern California, he had every reason to expect his investment would prompt the rapid growth of Hesperia and the surrounding area (LA Pub Lib 1923). The hotel took over two years to build and was constructed using over 40,000 handmade adobe bricks. It was a three-story structure with a basement. There was a communication system between all three floors, as well as hot and cold running water available in the restroom on each floor. The Hesperia hotel was in its glory from 1887 until it officially closed in 1926 (Digital Desert 1981).

Hesperia was named for Hesperus, the Greek god of the West. The railroad land developers published pamphlets distributed across the country with boosterism of Hesperia, California, as a potential metropolis, to become "the Omaha of the West" with projections of over 100,000 people by 1900 -- but only 1,000 arrived by the century milestone (Yetzer 1988). Hesperia grew relatively slowly until the completion of US Routes 66, 91, and 395 in the 1940s, followed by the expansion and re-routing of the old Route 66 into Interstate 15 in the late 1960s. The City served as the last stopping point before travelers made the treacherous trip down the Cajon Pass. About 30 square miles (78 km2) of land were laid out for possible residential development (Logan 2014).

In the early 1950s, land developer M. Penn Phillips and his silent financial partner, boxer Jack Dempsey, financed the building of roads and land subdivisions, promoting lot sales via the new medium of television. They built the Hesperia Inn and golf course, which attracted a variety of Hollywood celebrities. The Hesperia Inn also housed the Jack Dempsey Museum (Streitfield 2007). In 1955, Phillips was president of Hesperia Land Development and Hesperia Sales Corporation, while conceiving the *U-Finish Home*—mass-produced housing units that were finished on the outside leaving the buyer to complete the interior. In 1959 Phillips served as a member of the committee to form the Mojave Water Agency (MWA), a regional water management agency that secured a contract with the State of California for an allocation of imported water supply from the State Water Project (Time 1959). The MWA is responsible for managing groundwater resources in the Mojave River Basin and Morongo Basin and providing alternate water sources to the region as needed. It is one of 29 State Water Project contractors permitted to deliver water from the California Aqueduct. The MWA serves a 4,900 square mile area in the High Desert of San Bernardino County, including the Hesperia area (Mojave Water Agency 2020).

The main wave of newcomers, though, arrived at Hesperia in the 1980s and the City was officially incorporated in 1988. Suburban growth transformed the small town of 5,000 people in 1970 to a moderate-sized city with a population over 60,000 by 2000, and an estimated population over 95,000 as of July 1, 2018 (US Census Bureau 2021; Logan 2014).

#### 2.2.3.3 Project Site Land Use History

**Historic Topographic Maps**

The available United State Geological Survey (USGS) 7.5' topographic maps for the project area start with the 1902 *Baldy Mesa, Calif.* (USGS, 1902) topo map. This map shows open desert land in the project site and area. The elevation contours indicate that the gradient slopes toward the northeast with a 3.6 percent slope over approximately one mile. The 1942 USGS map (USGS 1942) shows the

property is transected (north/south) by what appears to be a dirt trail or four-wheel drive road. The US Route 66 (to the east) and US Route 395 (to the west) are depicted as primary roads/highways.

The 1956, 1968, 1980, 1988 topo maps (USGS 1956, 1968, 1980, 1988) show that the property is undeveloped, vacant land. US Route 395 is depicted as a secondary highway and Interstate 15, which was reconfigured during this period from US Route 66, is depicted as a highway with a median strip.

The 1996 topo map (USGS 1996) shows there is a large commercial building west of the project site at 8981 US-395 (which is currently occupied by the 3M Company).

The 2018 topo map (USGS 2018) shows that Poplar Street (the northern boundary of the project area) and Three Flags Avenue (the western boundary of the project area) are now present and depicted as durable, all-weather roads. To the south of the project boundary is Muscatel Street.

**Historic Aerial Images**

Historic aerial photos are available for this area of Hesperia; the earliest dating to 1938 (NETRonline 1938, 1952). The 1938 and 1952 aerial photos show that the property is undeveloped desert scrubland. The east side of the property is bounded by what appears to be a two-lane, all-weather road (US Route 66). The west side of the property is undeveloped, vacant land and there is faint evidence of a dirt road or trail that runs north to south.

The 1968 and 1985 aerial photos (NETRonline 1968, 1985) show that Interstate 15 to the east has been improved from a two-lane to a four-lane all-weather highway, indicating the transition from the earlier US Route 66.

The 1994 aerial photo (NETRonline 1994) shows that Poplar Street, which is the approximate northern boundary of the project area, has been developed with a durable, all-weather road. The approximate western boundary of the project area, which is Three Flags Avenue, appears to be an unimproved dirt road. In addition, the approximate southern boundary of the project area is a dirt access road. The land adjacent to the southwest of the subject property along Scarbrough Court appears to have been graded, likely for development. The 2002 aerial photo (NETRonline 2002) shows that the adjacent property to the south has been developed (with Zippy Lube A Truck and Little Sisters Truck Wash at 8899 Three Flags Road).

The 2009 aerial photo (NETRonline 2009) shows that the adjacent property to the southwest has been developed with Velocity Truck Centers (at 8995 Three Flags Avenue). In addition, the land to the west of the subject property and southwest of the intersection of Poplar Street and Three Flags Avenue, is developed (with Freedom Auto Repair, Donna Star Foods, and Hemingway Sheet Metal, Inc. at 12221). The 2014 and 2018 aerial photos (NETRonline 2014, 2018) show few discernable changes from the previous 2009 aerial photo.

# 3.0 RESEARCH METHODS

The cultural resources inventory and related archival research included a background cultural resources records check (archival research) at the SCCIC, California State University, Fullerton. Additionally, a SLF search was requested from the NAHC.

## 3.1 Records Search

A cultural resource records search was was conducted at the SCCIC on October 4, 2022, by Ms. Megan B. Doukakis. That research was completed to identify cultural resources on or near the project site. The local CHRIS facility for San Bernardino County maintained at the SCCIC was reviewed to identify resources that have been previously evaluated for historic significance, as well as to identify any previous completed cultural resources survey reports.

Also searched and reviewed were the official records and maps for cultural resources and surveys in Hesperia, National Register of Historic Places (NRHP); Listed Properties and Determined Eligible Properties (2012), and the California Register of Historical Resources (CRHR) (2012).

For the current study, the scope of the records search included a 0.5-mile buffer zone from the project's footprint (see **Attachment A, Figure 3**). The research effort was completed to assess the sensitivity of the project site for both surface and subsurface cultural resources and to assist in determining the potential to encounter such resources, especially prehistoric—i.e., Native American—cultural remains, during earth-moving activities associated with construction of the proposed project.

## 3.2 Field Survey

On August 31, 2022, archaeologists Daniel Ballester and Hunter O'Donnell visited the project site to conduct a pedestrian survey. During the survey, the project site was carefully inspected for any indication of human activities dating to the prehistoric or historic periods (i.e., 50 years or older).

## 3.3 Native American Outreach

On August 17, 2022, Mr. O'Neil contacted the NAHC via email notifying them of the project activities, requesting a search of their SLF and requesting a list of local tribal organizations and individuals to contact for project outreach. The NAHC replied on October 7, 2022 with a letter dated the same day reporting on the SLF search findings and a list of 20 tribal organizations and individuals to contact. Letters to local tribes were sent on October 11, 2022 to all of the tribal organizations and their representatives listed in the NAHC letter (**Attachment C**).

# 4.0 FINDINGS

## 4.1 Records Search

### 4.1.1 Recorded Archaeological Sites

Based on the cultural resource records search at the SCCIC, it was determined that two cultural resources were previously recorded within the project site boundary. Within the one-half-mile buffer zone, there are a further 10 recorded historic-era cultural resources. **Table 4.1-1** and **Table 4.1-2** summarizes these resources.

The two archaeological sites located in the project boundary consists of a single prehistoric isolate and an historic homestead. The prehistoric isolate (36-020263) is a small isolated pyroclastic nodule of obsidian located near the west end of the project boundary (Cerreto and Cunningham 2004). There are two or three small blade-like flakes removed from the nodule indicating a bipolar reduction technique was used. An historic homestead (36-010288) covered a quarter section of land that includes the project boundary (Alexandrowicz 2000; McKenna. 2015). This 160-acre area was homesteaded by John E. Dufton in 1892. Structural debris and historic refuse scatters were present during the 2000 and 2005 surveys but no structural remains from the homestead were identified. No features were identified with the current project boundary.

**Table 4.1-1**

**KNOWN CULTURAL RESOURCES WITHIN THE PROJECT AREA**

| Site Number | Author(s) | Date | Type | Description |
|---|---|---|---|---|
| 36-004275,<br>CA-SBR-4275H | Robert E. Reynolds<br>Edward Knell<br>Kenneth Becker and Jodie Phillips<br>Cary D. Cotterman | 1980<br>1991<br>1993<br>2002 | Historic | Toll Road-Houghtons Crossing Road. A rounded dirt road running through a creek. |
| 36-010288,<br>CA-SBR-10288H | J. S. Alexandrowicz<br>Jeanette A. McKenna | 2000<br>2015 | Historic | John E. Dufton Homestead. |

| Site Number | Author(s) | Date | Type | Description |
|---|---|---|---|---|
| 36-010920, CA-SBR-10920H | Cary D. Cotterman | 2002 | Historic | Early 20th -century refuse deposit with two artifact concentrations and a surrounding sparse artifact scatter. |
| 36-010921, CA-SBR-10921H | Cary D. Cotterman | 2002 | Historic | Early 20th-century refuse deposit with a surrounding sparse artifact scatter. |
| 36-012339, CA-SBR-12217H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 80 artifacts, including ceramic sherds, sherds of a porcelain teacup, glass bottle sherds, and cans of several sizes and shapes. |
| 36-012340, CA-SBR-12218H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 26 artifacts, including a ceramic plate, ceramic sherds, and several sizes and shapes of cans. |
| 36-012341, CA-SBR-12219H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 44 artifacts, including glass bottle sherds, porcelain dish sherds, cans, and a brick. |
| 36-012342, CA-SBR-12220H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 30 artifacts, including cans, porcelain sherds, and clear glass. |
| 36-012343, CA-SBR-12221H | K. Becker, S. Norris, and T. Diaz | 2005 | Historic | Historical-period refuse deposit that contains about 25 artifacts. |
| 36-012345, CA-SBR-12223H | V. Austerman and L. Lee | 2005 | Historic | Historic period road. |
| 36-012346, CA-SBR-12224H | V. Austerman and L. Lee | 2005 | Historic | Historic period road. |
| 36-020263 | R. Cerreto and R. Cunningham | 2004 | Prehistoric | A small isolated pyroclastic nodule of obsidian with removed flakes. |

### 4.1.1 Previous Cultural Resource Investigations

According to the records at the SCCIC, there have been eight previous cultural resource studies within portions of the 0.5-mile buffer of the project (**Table 4.1-2**). (See **Attachment D**). Two of these studies are located within the project boundary and six of these studies are located outside of the project boundary but in the half-mile buffer zone, **Table 4.1-2**.

The entire project area was surveyed by McKenna in 1991 (SB-02476) for a Phase I Linear Survey for the Hesperia Improvement District (McKenna 1991). This project indicated that the far east margin of the project boundary may be sensitive for cultural resources. In the southwest corner of the project boundary a Cultural Resources Assessment (SB-04036) took place on 1.44 acres for a proposed office building construction (Cerreto 2004). This survey was positive for an isolated flaked pyroclastic nodule of obsidian (36-020263).

**Table 4.1-2**
**KNOWN CULTURAL RESOURCE STUDIES WITHIN A HALF-MILE RADIUS OF THE PROJECT BOUNDARY**

| Report Number | Author(s) | Date | Title | Resources |
|---|---|---|---|---|
| SB-00191 | Smith, Gerald A. | 1973 | Archaeological, Historical And Paleontological Site Survey For County Service Area No. 70 Improvement Zone "J", Assessment of Impact And Recommendations | 36-002208 |
| SB-03448 | Alexandrowicz, John Stephen | 2000 | A Historical Resources Identification Investigation for the Little Sisters Truck Wash, City of Hesperia, San Bernardino County, California | 36-010287, 36-010288 |
| SB-02476 | McKenna, Jeanette | 1991 | A Phase I Linear Survey: Cultural Resources Investigations For The Hesperia Improvement District, Hesperia, San Bernardino County, California | NA |
| SB-02732 | Parr, Robert E. | 1992 | An Archaeological Assessment Of Tentative Parcel Map #14242 Baldy Mesa, San Bernardino County, Ca | 36-004179 |
| SB-04036 | Cerreto, Richard and Christy Malan | 2004 | Cultural Resource Assessment For Parcel 3, APN: 3064-591-17, City Of Hesperia, San Bernardino County, Ca. 18pp | 36-020263 |
| SB-04284 | Alexandrowicz, John Stephen | 2001 | Historic Archaeology At John E. Dufton's Homestead. 134 Pp | 36-010287, 36-010288 |
| SB-04285 | Green, Julia K | 2004 | Cultural Resources Inventory & Evaluation: Timbisha Shoshone Hotel & Casino, San Bernardino County, Ca. 22pp | NA |

| Report Number | Author(s) | Date | Title | Resources |
|---|---|---|---|---|
| SB-05107 | Chandler, Evelyn N, Cary D. Cotterman, and Roger D. Mason | 2002 | 2002 Cultural Resources Survey of The Proposed California Charter Academy Hesperia, San Bernardino County, California | NA |

## 4.2 Native American Outreach

On August 17, 2022, Mr. O'Neil contacted the NAHC via email notifying them of the project, requesting a search of their SLF and asking for a list of local tribal organizations and individuals to contact for project outreach. The results of the search request were received October 7, 2022, at the office of UEI from Ms. Cameron Vela, Cultural Resources Analyst. The NAHC letter stated that "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." (see **Attachment C**).

UEI prepared letters to each of the 20 tribal contacts representing 15 tribal organizations describing the project and included a map showing the project's location, requesting a reply if they have knowledge of cultural resources in the area, and asked if they had any questions or concerns regarding the project (see **Attachment C**). On October 11, 2022, Mr. O'Neil mailed these letters to the 20 tribal contacts, and also emailed identical letters and maps to the 20 tribal contacts for which email addresses were known.

On October 12, 2022, Patricia Garcia-Plotkin, Director for the Agua Caliente Band of Cahuilla Indians indicated through email the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. Jill McCormick, Historic Preservation Officer for the Quechan Tribe of the Fort Yuma Reservation responded though email on October 12, 2022, indicating that the tribe does not wish to comment on this project and defers to more local tribes. Ryan Nordness, Cultural Resources Analyst for the San Manuel Band of Mission Indians indicated through email on October 18, 2022 that the proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the tribe and the Band's cultural resources department is interested to consult whenever this project moves into AB 52/CEQA territory.

Following up on the initial letter and email contacts, telephone calls were conducted on October 25, 2022, to complete the outreach process. These calls were to the 15 tribal contacts who had not already responded to UEI mailing and email. Seven telephone calls were placed with no answer and so messages were left describing the project and requesting a response. These were to Chairperson Sandonne Goad, Chairperson of the Gabrielino/Tongva Nation; Councilmember Charles Alvarez, for the Gabrielino Tongva Tribe; Ann Brierty, Tribal Historic Preservation Officer for the Morongo Band of Mission Indians; Robert Martin, Chairperson for the Morongo Band of Mission Indians; Donna Yocum, Chairperson for the San Fernando Band of Mission Indians; Wayne Walker, Co-Chairperson for the Serrano Nation of Mission Indians; Anthony Madrigal, Historic Preservation Officer for the Twenty-Nine Palms Band of Mission Indians. In a call to Andrew Salas, Chairperson for the Gabrieleno Band of Mission Indians - Kizh Nation, there was no answer, and the mailbox was full so no message could be left. In a call to Sierra Pencille, Chairperson of the Chemehuevi Indian Tribe, the tribal receptionist asked that we leave a message for the Chairperson and a message was left. In a call to Lovina Redner, Tribal Chair of the Santa Rosa Band of Cahuilla Indians, the tribal receptionist

answered and indicated that Tribal Chair Redner was not in the office and transferred our call to the Chair's voicemail where a message was left. In a call to Mark Cochrane, Co-Chairperson of the Serrano Nation of Mission Indians, the phone number was out of service. In a call to Darrell Mike, Chairperson for the Twenty-Nine Palms Band of Mission Indians, the tribal receptionist indicated that the Chairperson was not in so she sent us to his assistant's phone; the assistant did not answer, and a message was left.

During the telephone calls of October 25, 2022, Chairperson Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians indicated that he did not have much information about the project area. But due to the resources present Mr. Morales would like to be informed of any artifacts that are encountered. Christina Conley, Tribal Consultant and Administrator for the Gabrielino Tongva Indians of California Tribal Council indicated that the tribe does not have any comment as it is outside of their tribal area. They defer to sister tribes. (See **Attachment C.**)

## 4.3 Pedestrian Survey Results

On August 31, 2022, an intensive level pedestrian survey of the project site was conducted by Mr. Daniel Ballester, M.A., and Mr. Hunter O'Donnell, B.A., archaeologists with CRM TECH. The survey consisted of walking over, visually inspecting, and photographing the exposed ground surface of the project site in parallel north/south transects spaced 15 meters apart across the project site. In this way the ground surface in the project area was carefully examined for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years or older).

The project consists of a field survey of approximately 19 acres situated between the Oro Grande Wash and the I-15 Freeway. The project site was seen to have been heavily disturbed by grubbing at some point between October 2020 and June 2022 with most of the vegetation and a significant amount of soil being bulldozed into a long berm along the southern portion of the parcel (**Figure 4.3-1**). The project area slopes downward gently towards the bottom of the valley and the Mojave River to the northeast. The vegetation was observed to consist mostly of thistle with a handful of Joshua trees (**Figure 4.3-2**) and a juniper tree, as well as small grasses and brush. Ground visibility was very good (95-100%) with thistle brush being the only obscuring factor.

During the survey, the ground surface within and adjacent to the project area was inspected for any evidence of human activities dating to the prehistoric or historic periods (**Figure 4.3-3** and **Figure 4.3-4**). During survey preparation, a dirt road was noted crossing the project area from north to south which first appears on USGS topographic maps as early as 1902, first appearing on a historical aerial photo in 1938 (NETR Online). During survey this road segment within the project area was found to have been obliterated during the aforementioned grubbing between 2020 and 2022.

An historical refuse scatter was noted in the eastern half of the project parcel. The refuse scatter consisted of cans, a tobacco tin, and fragments of historical glass (**Figure 4.3-5**). There were five metal containers consisting of meat and beverage cans and a tobacco tin (**Figure 4.3-6**). The historical glass consisted of approximately 15 bottle body fragments with a range of colors (opaque white, colorless, aqua, brown, sun-colored amethyst) along with an aqua bottle base fragment containing the text "DR W…" The coordinates, descriptions, and photos of this refuse scatter were recorded and a site record Update has been prepared for the site. This feature has been determined

to be a component of the larger CA-SBR-10288H site, the John E. Dufton homestead (see **Section 4.1.1**). See Continuation Sheet for CRM TECH 3937-1H in **CONFIDENTIAL Attachment E**.

No further historic features or artifacts were observed, and no prehistoric features or artifacts were observed in the project area.

**Figure 4.3-1**
**PROJECT SITE GROUND DISTURBANCE AND BERM**
**VIEW TO THE EAST FROM SOUTHERN BOUNDARY**



**Figure 4.3-2**
**PROJECT AREA OVERVIEW WITH JOSHUA TREES; VIEW TO THE SOUTHEAST**



**Figure 4.3-3**
**PROJECT AREA OVERVIEW; VIEW TO THE NORTHEAST**



**Figure 4.3-4**
**PROJECT AREA OVERVIEW; VIEW TO THE NORTHWEST FROM SOUTHEAST CORNER**



**Figure 4.3-5**
**HISTORIC REFUSE SCATTER OVERVIEW; VIEW TO THE NORTHWEST**



**Figure 4.3-6**
**TOBACCO TIN IN HISTORIC RESFUSE SCATTER**



## 4.4 National Register of Historic Places

A search of the Built Environmental Resource Directory (BERD) provided by the Office of Historic Preservation (2021) was conducted for this project on October 7, 2022. It was determined that the project boundary and project area do not have any resources present that have been evaluated under the National Register (Built Environmental Resource Directory).

# 5.0 MANAGEMENT CONSIDERATIONS

## 5.1 Site Evaluation Criteria

Evaluation of significance under CEQA uses criteria found in eligibility descriptions from the CRHR. Generally, a resource is to be considered historically significant if it meets the criteria for listing in the California Register [Public Resources Code § 5024.1; California Code of Regulations § 15064.5(a)(3)]. These criteria provide that a resource may be listed as potentially significant if it:

- Is associated with the events that have made a significant contribution to the broad patterns of California history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- Has yielded, or may be likely to yield, information important in prehistory or history.

## 5.2 Potential Effects

No CRHR- or NRHP-identified prehistoric or historic cultural resources are present on the project site and so will not be adversely affected by the project. However, the presence of buried cultural (prehistoric and/or historic archaeological) resources cannot be ruled out. If prehistoric and/or historic artifacts are observed during subsurface excavation, work should be stopped in that area and a qualified archaeologist and Native American monitor should be on call to assess the finds.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Two archaeological resources – one prehistoric and one historic – were identified in the CHRIS record literature search in the project site. These consist of a single worked nodule of obsidian (36-020263) located in the north-central portion of the project parcel, and the John E. Dufton homestead (CA-SBR-10288H) which encompasses the project site and a large area to the north, though no features were recorded within the current project site itself There are seven historic period refuse deposits and three historic period dirt roads located within the half mile radius of the project area, several have which have since been lost due to grading and plowing. USGS topographic historical maps and aerial photos indicate that the project site has always been open land. The pedestrian survey located and recorded a light scatter of historic refuse in the eastern portion of the project parcel, which has been recorded as a component of CA-SBR-10288H.

Two Native American tribal responses have been received to date. The San Manuel Band of Mission Indians stated that the proposed project is located near known prehistoric sites and the area is of concern to the tribe. They also requested to participate in AB 52 consultation. The Gabrieleno/Tongva San Gabriel Band of Mission Indians did not have information on the project area, but asked that they be informed of any artifacts encountered during the project. (See **Section 4.2** and **Attachment C.**)

This cultural resources study's findings based on the records search and pedestrian survey suggest that there is a medium potential for the presence of prehistoric cultural resources. If prehistoric and/or historic items are observed during subsurface activities, work should be stopped in that area and a qualified archaeologist and Native American monitor should be called to assess the findings and retrieve the material.

The light refuse scatter observed in the eastern area of the project site does not warrant preservation. However, as a component of the larger Dufton homestead site there is the potential for further subsurface artifacts and features of this site to be present. A monitor should be present during grading and trenching in these areas to recover material from these potential deposits to better understand the nature of the use of this homestead possibly dating back to the 1890s.

While the project site as a whole appears to be only disturbed in the upper levels of soil with some grading to build the berms and some discing, it is not recommended that an archaeological monitor be present during ground-disturbing activities throughout the project site (except as noted above). However, if prehistoric and/or historic items are observed during subsurface activities, work should be stopped in that area and a qualified archaeologist and Native American monitor be retained to assess the finding(s) and retrieve the material.

If human remains are encountered during excavations associated with this project, work will halt in that area and the San Bernardino County Coroner will be notified (§ 5097.98 of the Public Resources Code). The Coroner will determine whether the remains are of recent human origin or older Native American ancestry. If the coroner, with the aid of the supervising archaeologist, determines that the remains are prehistoric, they will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will make recommendations as to the manner for handling these remains and further provide for the disposition of the remains, as required by § 7050.5 of the California Health and Safety Code. Following notification by the NAHC, the MLD will make these recommendations within 48 hours of having access to the project site following notification by the NAHC. These recommendations may include scientific removal and nondestructive analysis of

human remains and items associated with Native American burials (§ 7050.5 of the Health and Safety Code).

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# ATTACHMENTS

# ATTACHMENT A

# PROJECT MAPS

**Figure 1**
**PROJECT REGIONAL LOCATION MAP**

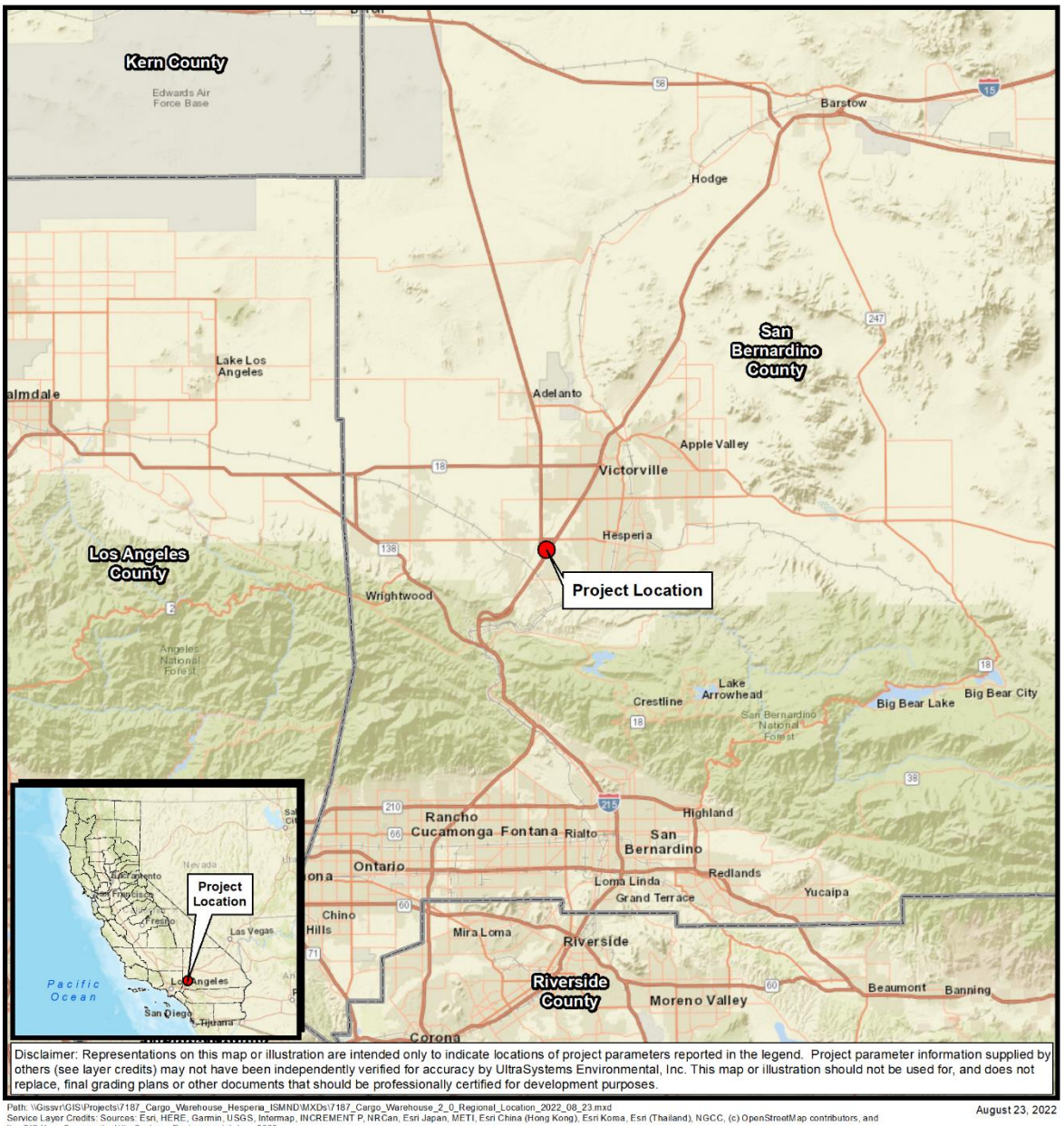
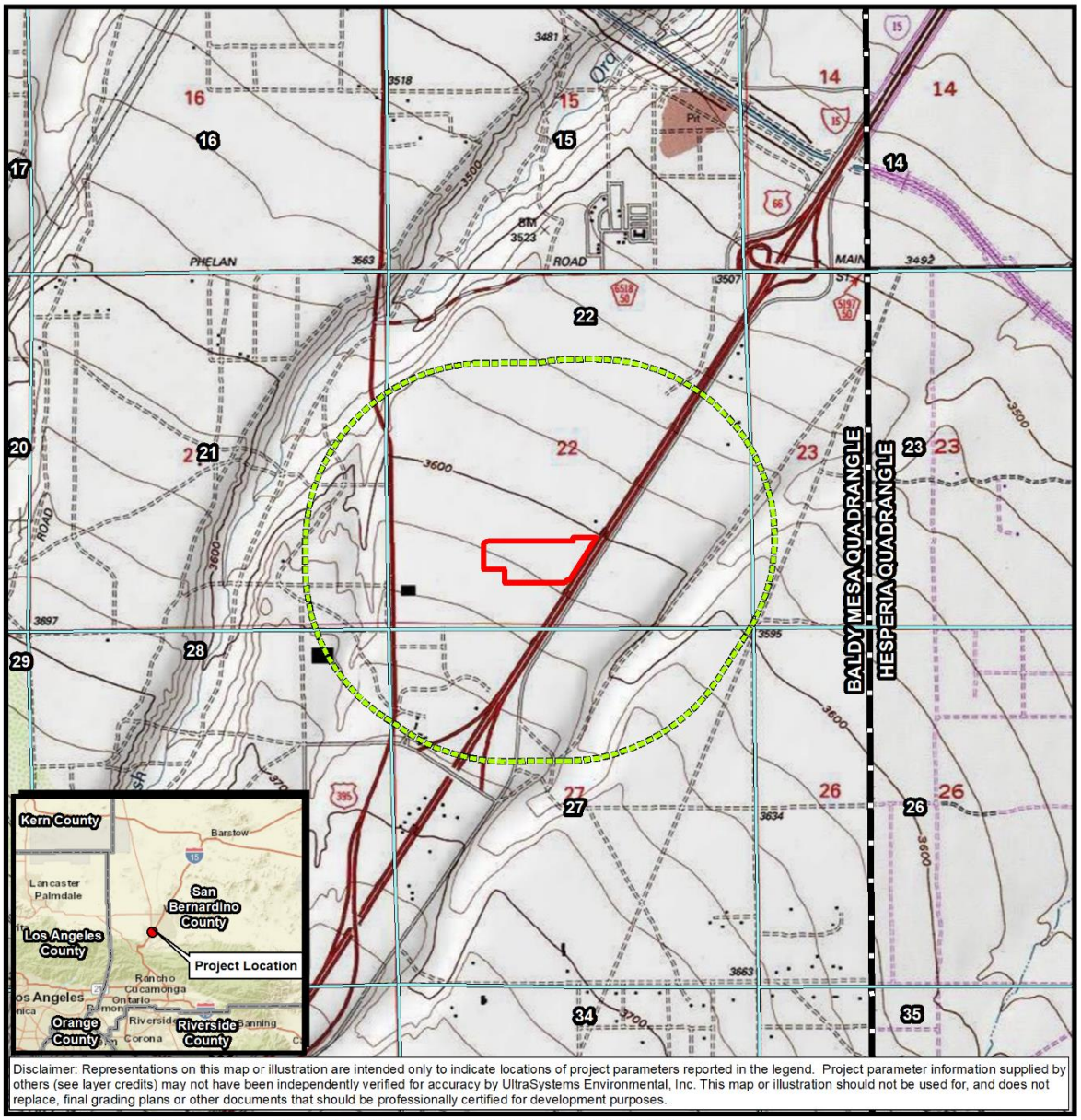


**Figure 2**
**PROJECT STUDY AREA**



**Figure 3**
**TOPOGRAPHIC MAP WITH APE SHOWN AND HALF-MILE BUFFER ZONE**




Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\7187_Cargo_Warehouse_4_5_Topo_2022_08_16.mxd
August 16, 2022
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed; CA Dept. of Conservation, May 2019; UltraSystems Environmental, Inc., 2022

Scale: 1:24,000

N

0 1,000 2,000 Feet

0 250 500 Meters

**Legend**

- Project Location
- Half-Mile Radius
- Quadrangle Boundary
- Section Boundary

**Cargo Solutions Truck Warehouse**

Topographic Map
USGS Quadrangle: Baldymesa
Township: 4N Range: 5W
Section: 22

UltraSystems
environmental • management • planning

# ATTACHMENT B

# PERSONNEL BACKGROUND

## Stephen O'Neil, M.A., RPA

*Cultural Resources Manager, Cultural Anthropology/Archaeology*

### Education

- M.A., Anthropology (Ethnography emphasis), California State University, Fullerton, CA, 2002
- B.A., Anthropology, California State University, Long Beach, CA, 1979

### Professional and Institutional Affiliations

- California Mission Studies Association
- City of Laguna Beach Environmental Sustainability Committee, appointed 2012
- Orange County Natural History Museum; Board Member
- Pacific Coast Archaeological Society; Board Member and Past President
- Society for California Archaeology

### Professional Registrations and Licenses

- Register of Professional Archaeologists (No. 16104) (current)
- Riverside County, CA, Cultural Resource Consultant (No. 259) (current)
- Cultural Resource Field Director, BLM Permit (CA-13-19) – California, 2013
- NEPA and CEQ Consultation for Environmental Professionals; course by the National Association of Environmental Professionals, 2013

### Professional Experience

Mr. O'Neil has 30 years of experience as a cultural anthropologist in California. He has researched and written on archaeology, ethnography, and history. Mr. O'Neil has archaeological experience in excavation, survey, monitoring, and lab work. Most of this has been on Native American prehistoric sites, but also includes Spanish, Mexican, and American period adobe sites. His supervisory experience includes excavation and survey crew chief and project director of an adobe house excavation. He has a wide range of expertise in Phase I & II Environmental Site Assessments, archaeological resource assessment surveys, salvage operations, and cultural background studies for various EIR projects. Mr. O'Neil has worked for cultural resource management firms as well as government agencies and Native American entities. He has prepared technical reports as well as published journal articles.

### Select project experience

***Inglewood Avenue Corridor Widening Project, City of Lawndale, Los Angeles County, CA: 2013-2014***

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. The City of Lawndale is widening Inglewood Avenue from Marine Avenue north. The project uses Caltrans funds and the cultural resources report was prepared in Caltrans format. A separate historic properties report was prepared as well. Prepared for Huitt-Zollars Engineering.

***Via Ballena Storm Drain Relocation, City of San Clemente, Orange County, CA: 2013***

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This residential area has a damaged storm drain under Via Ballena that was causing earth movement and erosion. The requirements for state funding, and cultural resources inventory report was required. Prepared for the City of San Clemente.

***Pine Canyon Road – Three Points Road to Lake Hughes Road, Los Angeles County, CA: 2013***

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This nine-mile portion of Pine Canyon Road lies partially within the Angeles National Forest. A series of widening and culvert repairs is planned by the Los Angeles County Department of Public Works (LACDPW). An assessment was made of possible cultural resources, historic and prehistoric that may be affected by the construction, and four historic sites were recorded. Prepared for LACDPW.

***Alton Parkway Extension Project, Cities of Irvine and Lake Forest, Orange County, CA: 2012***

Mr. O'Neil directed and conducted archaeological and paleontological monitoring, archaeological excavation, cultural resource records search, Native American contacts and report writing for this project. Alton Parkway was extended 2.1 miles between the cities of Irvine and Lake Forest. For the portion within the City of Irvine, UltraSystems conducted monitoring and excavation services. One prehistoric site was excavated and reported on; a series of living features were discovered and also reported. The final monitoring report described the paleontological and archaeological findings. A separate technical report on the archaeological excavations was also prepared. Mr. O'Neil directed research into historic and prehistoric background and prepared the final assessment of potential impacts. Prepared for the Orange County Department of Public Works.

***NEPA and CEQA Documentation, Los Angeles Regional Interoperable Communications System (LA-RICS), Los Angeles County, CA: 2011-2014***

Mr. O'Neil is part of the UltraSystems team currently preparing technical studies and NEPA and CEQA documentation toward the construction of LA-RICS, an $800-million emergency communications system due to be operational in 2016. LA-RICS will provide a highly-coordinated emergency communications system to all first responders to natural and man-made disasters throughout Los Angeles County. Mr. O'Neil is the cultural and historical resources studies team leader, directing five researchers. These studies include coordination of field visits to all 260-plus locations for an archaeologist and/or an architectural historian with agency escorts to observe and record any onsite prehistoric and historic features, performing records and literature searches at archaeology information centers and local archives, contacting local agencies for historically listed structures and

districts, coordinate public notices of the project throughout Los Angeles County, consultation with the NAHC and all local tribal organizations, and direct consultation with the California State Historic Preservation Officer (SHPO). This information was compiled by Mr. O'Neil and is used to prepare FCC historical resource forms which were submitted to the SHPO for review.

## Megan B. Doukakis, M.A.

*Assistant Project Archaeologist*

### Education

- M.A. Public Archaeology, California State University, Northridge, 2012–2018
- B.A., Anthropology, California State University, Long Beach, 2011
- University of California, Los Angeles - Pimu Catalina Archaeological Field School, 2010
- International Scholar Laureate Program: Delegation on Anthropology and Archaeology in China, 2009
- Earthwatch Institute, "Unearthing Mallorca's Past" archaeological excavation, Mallorca, Spain, 2005

### Professional and Institutional Affiliations

- Phi Kappa Phi National Honor Society, 2011
- Sigma Alpha Lambda, National Leadership and Honor Organization, 2010
- Society for California Archaeology Membership 2012–2015

### Professional Experience

Mrs. Doukakis has worked in the field of cultural resource management for seven years at environmental firms. Before this Mrs. Doukakis had participated in multiple field schools in Southern California and abroad. She has experience in survey, excavation, laboratory work, and information searches. Mrs. Doukakis holds the title of Archaeological Technician at UltraSystems Environmental. Prior to this, she completed a CRM internship at UltraSystems. These positions have provided her with the opportunity to contribute to proposals, final reports, project scheduling, archaeological record searches and paleontological, archaeological and Native American monitor organizing for projects.

### Select project experience

***Results of the Condition Assessment, Site Monitoring, and Effects Treatment Plan (CASMET) Marine Corps Base Camp Pendleton, San Diego County, CA***

***Client: Marine Corps Base Camp Pendleton, Duration: 5/11 to 9/11***

Mrs. Doukakis conducted survey and excavation for the USMC Base Camp Pendleton condition assessment project. Areas were tested around Camp Pendleton for the presence and condition of cultural material previously recorded. She also conducted laboratory work and curation for the material collected within excavations. Mrs. Doukakis contributed to the final report with background records searches and prehistoric and historic background writing for the report.

***Archaeological Excavation Results Report for the Alton Parkway Extension Project, Orange County, CA***

***Client: Orange County Department of Public Works; Contract: $357,170, 10/10 to 6/12***

Mrs. Doukakis participated in the Alton Parkway project, City of Irvine, Orange County, CA. She was responsible for cleaning and cataloging the artifacts recovered from the excavation and surface

collections. She also contributed to the final report by compiling the historical background information.

### *Identification and Evaluation of Historic Properties ADA Wheelchair Access Ramp Improvement Project, City of Lake Forest, Orange County, CA*

***Client: City of Lake Forest/Penco, Contract: $2,981.62, Duration: 6/12 to 7/12***

Mrs. Doukakis contributed to the cultural resource records search, field survey, Native American contacts and report writing for this project. This residential area required wheelchair access ramps on every corner in this neighborhood. An assessment of the possible cultural resources that may be affected with this construction was made for the City of Lake Forest. Mrs. Doukakis contributed the historic and prehistoric background, and the assessment of the possible resources in the area.

### *Tenaska Solar Projects Imperial Solar Energy Center–South; Imperial Solar Energy Center–West; and Wistaria Ranch, Imperial County, CA*

***Client: Tenaska/CSOLAR Development, Contract: $3,441,809, 10/13 to 8/15.***

Mrs. Doukakis conducted Native American contacts for field monitoring, coordinated with subcontractors to initiate cultural and paleontological field surveys, for the several solar energy projects being handled by UltraSystems Environmental in the El Centro area, Imperial County, CA. She contributed different parts of the survey report and monitoring program documents, including historic and prehistoric background, editorial review. At ISEC- West, Mrs. Doukakis was responsible for contacting and organizing Tribal monitors for this project. She contacted tribal organizations and inquired about their interest in providing tribal monitors for this project. directly organized with Native American groups to sign agreements, and fill out tax paperwork. She was also responsible for organizing and keeping track of and gathering field log from monitors from six tribal groups. She also recovered previously recorded artifacts in the field before the start of the project.

### *NEPA and CEQA Documentation, Los Angeles Regional Interoperable Communications System -Long Term Evolution, Los Angeles County, CA*

***Client: LARICS Joint Powers Authority, Contract: $3,051,312, 1/12 to 1/15.***

UltraSystems' team prepared technical studies and NEPA and CEQA documentation toward the construction of LA-RICS-LTE, an $800-million emergency communications system that will provide a highly coordinated emergency communications system to all first-responders to natural and man-made disasters throughout Los Angeles County. For this project Mrs. Doukakis conducted record searches at the South Central Coastal Information Center for the Department of Commerce on over 300 project sites throughout the County of Los Angeles. She helped prepare letters to the NAHC and tribal organizations associated with the project area. Mrs. Doukakis contributed to contacting, organizing, and scheduling architectural historians to conduct historical research around the project areas. Letters were written for contact to local agencies and cities. A public notice was constructed and published in three local newspapers. Mrs. Doukakis also constructed hundreds of Federal Communications Commission 620 and 621 forms for submission to California State Historic Preservation Office.

### *Newton Canyon Monitoring Project, CA*

***Client: County of Los Angeles Department of Public Works, Contract: $2,930.00, Duration: 7/13 to 12/13***

Mrs. Doukakis was an archaeological monitor for this project. She monitored all ground disturbing activities as well as lightly surveying the area for cultural material. Mrs. Doukakis also conducted the records center research at the South Central Coastal Information Center at CSUF. Through email, letter, and telephone correspondence, Mrs. Doukakis contacted the NAHC and associated tribal groups.

# Brent Johnson

*Historian*

UltraSystems
environmental • management • planning



**Years of Experience**
22

**Years with Firm**
1

**Education**

- M.A. History of Science: California State University, Fullerton, 1998
- B.A. History of Science, University of California, San Diego, 1991

**Professional Registrations**

- Advisory Council on Historic Preservation, Section 106 Essentials, Certificate
- Asbestos Building Inspector, Initial Course DOSH CA-015-05, Certificate 8BII0518150008N6786
- Lead Inspector / Risk Assessor, Lead-Related Construction Certificate ID# 31233
- CPR, First Aid & AED Certification, Issued 11/12/2015 with Renewal on 11/2017
- RF Safety 101 Certification, Issued 12/17/2015
- Remote Pilot Certification, 3980697, Issued March 2017
- NAUI Certified Scuba Diver, 1992

## PROFESSIONAL SUMMARY

Mr. Johnson has significant experience in due diligence assessments for a variety of property types and the needs and requirements of a varied number of reporting standards, including ASTM standards, EPA's All Appropriate Inquiry (AAI), and customized client formats. Specifically, Mr. Johnson has performed Architectural Historian Evaluations, Phase I Environmental Site Assessments, Environmental Transaction Screens, Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS) preliminary environmental assessments, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) Phase I and Phase II assessments, Floodplain Evaluation reports, and Lead and Asbestos Inspections and Sampling.

## SELECT PROJECT EXPERIENCE

### *Architectural Historian Evaluation (DPR 523 Form), Mar Vista Apartments, Port Hueneme CA (2021)*

The International Style, Mar Vista Apartments was evaluated to determine whether it is eligible for the National Register of Historic Places. The building was designed by master architects Roy C. Wilson, John F. Stroh, and George Wilson, AIA. So successful was their architectural practice that by the 1920s few of the buildings constructed on Main Street in Santa Paula were designed by anyone other than Roy Wilson. Prominent architect Roy E. Colbert and apprentice of Wilson and Stroh was interviewed for this project, providing insights into the practical considerations of designing residential, commercial, and industrial architectural for a new community.

### *CEQA – Laguna Beach Cliff Drive Access, Laguna Beach CA (2018)*

This cultural resources records search and site visit evaluated the potential impact of improvements to the public right-of-way to include the removal of wood and concrete stairs and a retaining wall, and new construction of a drainage system, slope stabilization, and pedestrian lighting. The assessment determined that the project would not impair the historic viewshed; however, its proximity to the Heisler Park prehistoric encampment, prompted a recommendation for archaeology site monitoring during the demolition phase.

### *Defense Environmental Restoration Program for Formerly Used Defense Sites (2003- 2004)*

Mr. Johnson conducted field investigations and historical research for the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS) to determine the potential for release of hazardous, toxic radioactive waste, munitions constituents, and unexploded ordnance resulting from previous military activities. Extensive archival research and oral historical interviews with veterans were used to identify areas of potential hazard. Mr. Johnson also assisted in authoring a number of preliminary assessments for the USACE Los Angeles District including: Van Nuys Army Airfield, CA; Ontario Army Air Field, CA; U.S. Air Force Plant 16 (NASA), CA; U.S. Air Force Plant 14 (NASA), CA; Marquardt Ramjet Development Facility, CA; Pomona Quartermaster Depot, CA; Naval Supply Depot (NSD) Clearfield, UT; Mira Loma Quartermaster Depot, CA; Corona Annex Naval Surface Warfare Center, CA; Davis-Monthan Air Force Base, AZ; and the former Los Angeles Nike Missile Sites located at: Magic Mountain/Lang/Saugus, LA-98, Pointe Vicente (Palos

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Facsimile: 949.788.4901
Website: www.ultrasystems.com

Verdes), LA-55, Barley Flats – Mt. Disappointment, LA-09, Van Nuys – Sepulveda, LA-96, Los Pinetos/Newhall, LA-94. Most recently, Mr. Johnson authored the historic context statement for the Fort Irwin National Training Center in San Bernardino, CA.

***FCC NEPA Wireless Telecommunications Sites (2005 – 2016)***

Mr. Johnson has provided NEPA compliance consulting for the Bechtel Cingular Program, Sprint-Nextel, Verizon Wireless, American Tower Corporation, Global Tower LLC, Cricket Wireless, T-Mobile USA, Horizon Tower LLC, Clearwire, AT&T Mobility, and MetroPCS environmental contracts, which included over 1,000 sites between 2005 and 2016.

***Phase II Cultural Resources Historic Building Inventory, Penmar, Venice CA (2011)***

The purpose of the cultural resource survey report for the Penmar Water Quality Improvement and Runoff Reuse Project was to provide an historic architectural assessment for several historic period structures in the city of Venice. The project included an architectural history of Venice; intensive-level evaluation of five historic buildings and determination of eligibility for the California Register of Historical Resources; and an oral presentation of the project methodology and conclusions to the Los Angeles Department of Public Works, Bureau of Engineering.

***Built Environment Survey for Silverleaf Solar Project, El Centro CA (2011)***

The goal of this investigation was to determine whether built environment resources exist within project areas associated with the proposed Silverleaf Solar Project and the associated transmission line, and if so, to determine their eligibility for inclusion on the National Register of Historic Places. The collections of both the South Coast Information Center and the Pioneers Park Museum archives were reviewed, and interviews with the Imperial County Historical Society and resident of 85 years, Mr. Jack Strobel were conducted to establish the historic context of the site and surrounding vicinity. An architectural history of El Centro was written as part of the introductory material for the report, and during the site walk seven buildings were identified with the area of potential effect. Each building was evaluated using the DPR Primary Record Form and were determined ineligible for the National Register of Historic Places.

***Alon Bakersfield Refinery Crude Flexibility Project, Bakersfield CA (2013)***

Proposed improvements to the 427-acre Alon Bakersfield Oil Refinery, which included the expansion of railroad, transfer and storage facilities, and process units, presented a potential impact to a historic refinery that may have significance to the early development of the petroleum industry in California. A direct assessment of four historic-period (circa 1940) buildings including the original laboratory, fire house, maintenance and planning building, and warehouse was conducted using the DPR523 form set. It was determined that the buildings were ineligible for the NR, CR, or Local designation and a status code of 6Z was assigned to each building.

***USC Historic Campus - Crown Castle DAS Communications Project, Los Angeles CA (2013)***

The Crown Castle development of eight externally-mounted DAS wireless antennas within the historic core of the USC campus required an evaluation of potential impacts to the USC Historic District. Direct assessments using the DPR Primary Record and Building, Structure, and Object Record forms were performed for the Social Science Building, designed by Edward Durell Stone; Booth Ferris Rehearsal Hall, designed by William L. Pereira; Neely Petroleum & Chemical Engineering Building, designed by Smith, Powell & Morgridge; Edward L. Doheny Jr. Memorial Library, designed by Samuel E. Lunden; Robert Glenn Rapp Engineering Building, designed by Smith, Powell & Morgridge; Physical Education Building, designed by Parkinson & Parkinson; and the Norris Dental Science Center.

***Alamitos Park Project-HSIPL-5108, Long Beach CA (2013)***

This Historical Resources Evaluation Report (HRER) and Historic District Evaluation of the Saint Anthony's Parish involved the assessment of approximately 50 residential and commercial buildings, in addition to the Saint Anthony's Catholic Parish. The purpose of the report was to determine potential impacts and suggest possible mitigation associated with the development of the proposed Alamitos Park Project. The project involved a records search at the South Central Coastal California Information Center (SCCIC); review of Long Beach City building permits and city directories; a summary of Long Beach historic architecture; and direct assessment of every building older than 45 years within the proposed area of impact along Martin Luther King Jr. Avenue, 6th Street, and 7th Street.

# ATTACHMENT C

# NATIVE AMERICAN HERITAGE COMMISSION RECORDS SEARCH

UltraSystems
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August 17, 2022

Government Program Analyst
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, California 95691

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Dear NAHC Staff,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems will conduct a cultural resources study to evaluate the potential presence of prehistoric and historic resources within the project boundary. I am requesting a Native American Contact List of interested tribes, organizations and individuals in the general Project area, and a search of the Sacred Lands File for potential traditional cultural sites in the project area.

The proposed project includes the development of three buildings that include warehouse, office and grade-level door for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldymesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south.

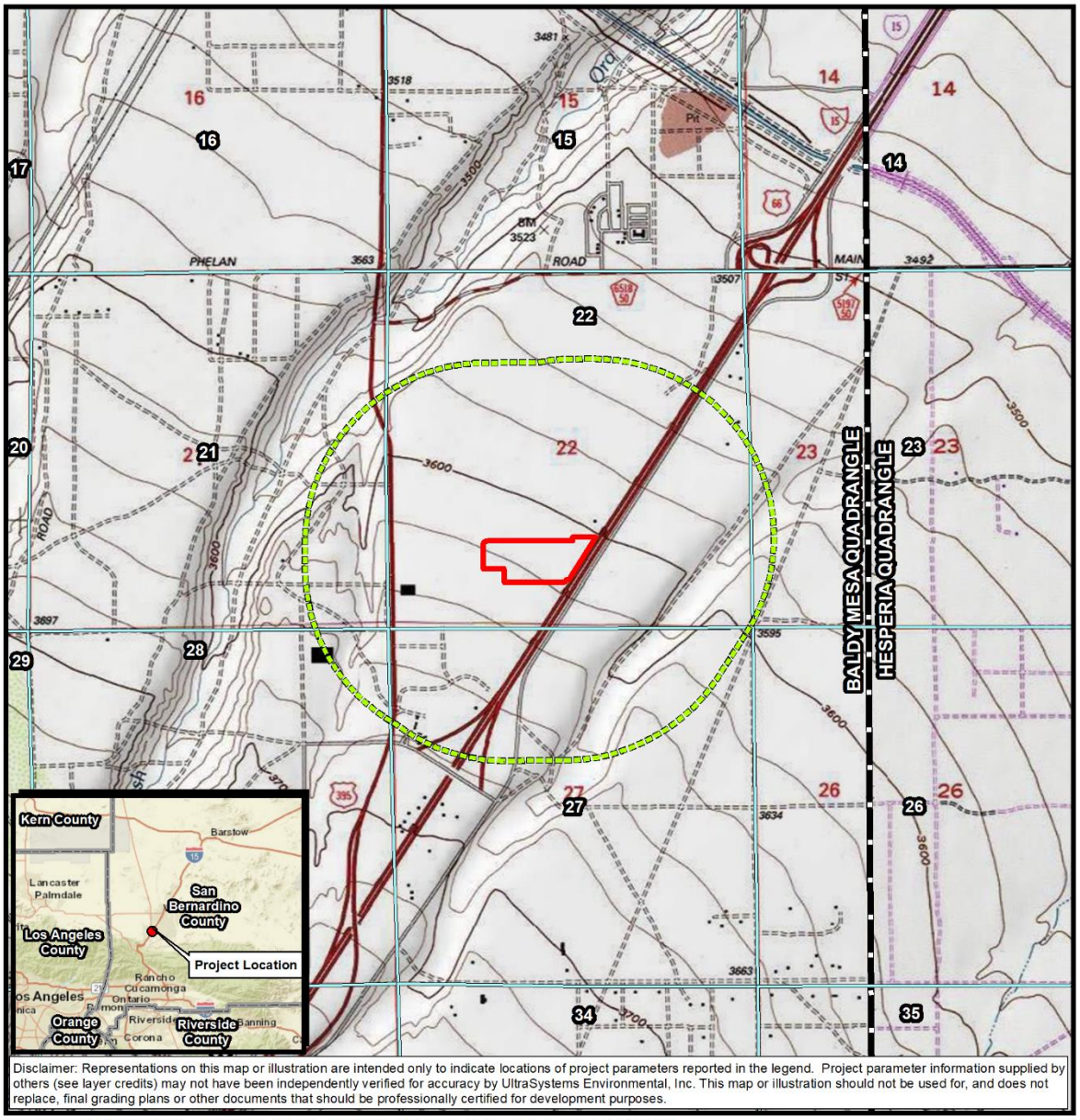
If you require additional information or have any questions, please contact me.

Thank you for your help.

Sincerely,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
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BALDY MESA QUADRANGLE
HESPERIA QUADRANGLE
PHELAN
ROAD
MAIN ST
Kern County
Barstow
Lancaster
Palmdale
San Bernardino County
Los Angeles County
Project Location
Rancho Cucamonga
Ontario
Riverside
Corona
Banning
Orange County
Riverside County
Disclaimer: Representations on this map or illustration are intended only to indicate locations of project parameters reported in the legend. Project parameter information supplied by others (see layer credits) may not have been independently verified for accuracy by UltraSystems Environmental, Inc. This map or illustration should not be used for, and does not replace, final grading plans or other documents that should be professionally certified for development purposes.
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August 16, 2022
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed; CA Dept. of Conservation, May 2019; UltraSystems Environmental, Inc., 2022
Scale: 1:24,000
N
0 1,000 2,000 Feet
0 250 500 Meters
Legend
Project Location
Half-Mile Radius
Quadrangle Boundary
Section Boundary
Cargo Solutions
Truck Warehouse
Topographic Map
USGS Quadrangle: Baldymesa
Township: 4N Range: 5W
Section: 22
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STATE OF CALIFORNIA Gavin Newsom, *Governor*

# NATIVE AMERICAN HERITAGE COMMISSION

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*Luiseño*

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**[Vacant]**

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*Miwok/Nisenan*

**NAHC HEADQUARTERS**
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 7, 2022

Stephen O'Neil
UltraSystems Environmental

Via Email to: soneil@ultrasystems.com

**Re: Cargo Solutions Truck Warehouse Hesperia UltraSystems Environmental Project No. 7187, San Bernardino County**

Dear Mr. O'Neil:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
*Cultural Resources Analyst*

Attachment

**Native American Heritage Commission**
**Native American Contact List**
**San Bernardino County**
**10/7/2022**

***Agua Caliente Band of Cahuilla Indians***
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

***Agua Caliente Band of Cahuilla Indians***
Reid Milanovich, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
laviles@aguacaliente.net

***Chemehuevi Indian Tribe***
Sierra Pencille, Chairperson
P.O. Box 1976 1990 Palo Verde Drive — Chemehuevi
Havasu Lake, CA, 92363
Phone: (760) 858 - 4219
Fax: (760) 858-5400
chairman@cit-nsn.gov

***Gabrieleno Band of Mission Indians - Kizh Nation***
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

***Gabrieleno/Tongva San Gabriel Band of Mission Indians***
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

***Gabrielino /Tongva Nation***
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

***Gabrielino Tongva Indians of California Tribal Council***
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078 — Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

***Gabrielino Tongva Indians of California Tribal Council***
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

***Gabrielino-Tongva Tribe***
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

***Morongo Band of Mission Indians***
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

***Morongo Band of Mission Indians***
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UltraSystems Environmental Project No. 7187, San Bernardino County.

PROJ-2022-005788 — 10/07/2022 12:34 PM — 1 of 2

**Native American Heritage Commission**
**Native American Contact List**
**San Bernardino County**
**10/7/2022**

***Quechan Tribe of the Fort Yuma Reservation***
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

***Quechan Tribe of the Fort Yuma Reservation***
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

***San Fernando Band of Mission Indians***
Donna Yocum, Chairperson
P.O. Box 221838 — Kitanemuk
Newhall, CA, 91322 — Vanyume
Phone: (503) 539 - 0933 — Tataviam
Fax: (503) 574-3308
ddyocum@comcast.net

***San Manuel Band of Mission Indians***
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Jessica.Mauck@sanmanuel-nsn.gov

***Santa Rosa Band of Cahuilla Indians***
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

***Serrano Nation of Mission Indians***
Mark Cochrane, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (909) 528 - 9032
serranonation1@gmail.com

***Serrano Nation of Mission Indians***
Wayne Walker, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (253) 370 - 0167
serranonation1@gmail.com

***Twenty-Nine Palms Band of Mission Indians***
Darrell Mike, Chairperson
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

***Twenty-Nine Palms Band of Mission Indians***
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UltraSystems Environmental Project No. 7187, San Bernardino County.

PROJ-2022-005788 — 10/07/2022 12:34 PM — 2 of 2

UltraSystems
environmental•management•planning

October 11, 2022

Charles Alvarez
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA, 91307

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Mr. Alvarez,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrielino-Tongva Tribe. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
Telephone: 949.788.4900, ext. 276
Facsimile: 949.788.4901
Website: www.ultrasystems.com

UltraSystems
environmental•management•planning

October 11, 2022

Ann Brierty, THPO
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA, 92220

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Brierty,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
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October 11, 2022

Mark Cochrane, Co-Chairperson
Serrano Nation of Mission Indians
P. O. Box 343
Patton, CA, 92369

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Co-Chairperson Cochrane,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Serrano Nation of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Christina Conley, Tribal Consultant and Administrator
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 941078
Simi Valley, CA, 93094

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Conley,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrielino Tongva Indians of California Tribal Council. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
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soneil@ultrasystems.com

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October 11, 2022

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA, 90707

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Dorame,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA, 92264

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Garcia-Plotkin,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

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Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Sandonne Goad, Chairperson
Gabrielino /Tongva Nation
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Goad,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Anthony Madrigal, Tribal Historic Preservation Officer
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA, 92236

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Mr. Madrigal,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Robert Martin, Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA, 92220

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Martin,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Jessica Mauck, Director of Cultural Resources
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA, 92346

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Mauck,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Darrell Mike, Chairperson
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA, 92236

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Mike,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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Respectfully yours,

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soneil@ultrasystems.com

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October 11, 2022

Jill McCormick, Historic Preservation Officer
Quechan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ, 85366

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. McCormick,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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Thank you for your help.

Respectfully yours,

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Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Reid Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA, 92264

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Milanovich,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Agua Caliente Band of Cahuilla Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
Telephone: 949.788.4900, ext. 176
Facsimile: 949.788.4901
Website: www.ultrasystems.com

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October 11, 2022

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Morales,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrieleno/Tongva San Gabriel Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Sierra Pencille, Chairperson
Chemehuevi Indian Tribe
P.O. Box 1976
1990 Palo Verde Drive
Havasu Lake, CA, 92363

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Pencille,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Chemehuevi Indian Tribe. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,



Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA, 92539

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Tribal Chair Redner,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Santa Rosa Band of Cahuilla Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Salas,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrieleno Band of Mission Indians - Kizh Nation. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
Quechan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ, 85366

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Acting Chairman Scott,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Quechan Tribe of the Fort Yuma Reservation. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Wayne Walker, Co-Chairperson
Serrano Nation of Mission Indians
P. O. Box 343
Patton, CA, 92369

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Co-Chairperson Walker,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Serrano Nation of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
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October 11, 2022

Donna Yocum, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA, 91322

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Yocum,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the San Fernando Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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## Cargo Solutions Warehouse Project, City of Hesperia, San Bernardino County, California. [UEI #7187]

### Native American Contact Log

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| Cameron Vela, Cultural Resource Analyst | Native American Heritage Commission | | August 17, 2022 | N/A | Request for Sacred Lands File search and local Native American representatives contact information. Responded October 7, 2022. |
| Reid Milanovich, Chairperson | Agua Caliente Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received the same day thanking us for our email. An email response was received from Archaeological Technician Nicole A. Raslich on October 12, 2022, indicating that the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. |
| Patricia Garcia-Plotkin, Director | Agua Caliente Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received from Archaeological Technician Nicole A. Raslich on October 12, 2022, indicating that the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. |
| Sierra Pencille, Chairperson | Chemehuevi Indian Tribe | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist asked that we leave a message for the Chairperson. A message was left. There has been no response to date. |
| Andrew Salas, Chairperson | Gabrieleno Band of Mission Indians - Kizh Nation | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and the mailbox was full so no message was left. |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| Anthony Morales, Chairperson | Gabrieleno/ Tongva San Gabriel Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. The Chairperson called back the same day and indicated that he did not have much information about the project area. But due to the resources present he would like to be informed of any artifacts that are encountered. |
| Sandonne Goad, Chairperson | Gabrielino /Tongva Nation | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Robert Dorame, Chairperson | Gabrielino Tongva Indians of California Tribal Council | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. Ms. Conley replied for the Tribe – see below. |
| Christina Conley, Tribal Consultant & Administra-tor- | Gabrielino Tongva Indians of California Tribal Council | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. Ms. Conley indicated that the tribe does not have any comment as it is outside of their tribal area. They defer to sister tribes. . |
| Charles Alvarez, Councilmem ber | Gabrielino - Tongva Tribe | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A delivery status failure was received for this email on the same day. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Ann Brierty, THPO | Morongo Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| | | | | | answer, and a message was left. There has been no response to date. |
| Robert Martin, Chairperson | Morongo Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Jill McCormick, Historic Preservation Officer | Quechan Tribe of the Fort Yuma Reservation | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email was received from Ms. McCormick on October 12, 2022, indicating that they do not wish to comment on this project and defer to more local tribes. |
| Manfred Scott, Acting Chairman | Quechan Tribe of the Fort Yuma Reservation | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email was received from Ms. McCormick on October 12, 2022, indicating that they do not wish to comment on this project and defer to more local tribes. |
| Donna Yocum, Chairperson | San Fernando Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Jessica Mauck, Director of Cultural Resources | San Manuel Band of Mission Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received on October 18, 2022 from Ryan Nordness, Cultural Resources Analyst indicating that the proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the YSMN and the department is interested to consult |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| | | | | | whenever this project moves into AB52/CEQA territory. |
| Lovina Redner, Tribal Chair | Santa Rosa Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist answered and indicated that Tribal Chair Redner was not in the office and transferred our call to the Chair's voicemail. A message was left. There has been no response to date. |
| Mark Cochrane, Co-Chairperson | Serrano Nation of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The phone number was out of service. There has been no response to date. |
| Wayne Walker, Co-Chairperson | Serrano Nation of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Darrell Mike, Chairperson | Twenty-Nine Palms Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist indicated that the Chairperson was not in so she sent me to his assistants phone, she did not answer, a message was left. |
| Anthony Madrigal, Historic Preservation Officer | Twenty-Nine Palms Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |

**From:** Steve Oneil
**To:** THPO Consulting; Megan Black
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 3:11:09 PM
**Attachments:** image002.jpg
image003.png

Good afternoon Ms. Raslich,

Thank you for your reply on behalf of the Agua Caliente Band regarding the Cargo Solution Truck Warehouse project in Hesperia. Your response will be placed in the cultural resources report.

Steve O'Neil

**Stephen O'Neil | Cultural Resources Manager | M.A./RPA**

**UltraSystems Environmental | WBE/DBE/SBE/WOSB**
16431 Scientific Way
Irvine, CA 92618
Office **949.788.4900 ext. 276**
Fax 949.788.4901
Cell 949.677.2391

---

**From:** THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Sent:** Wednesday, October 12, 2022 3:07 PM
**To:** 'mblack@ultrasystems.com' <mblack@ultrasystems.com>; THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Cc:** 'Steve Oneil' <soneil@ultrasystems.com>
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Hello,

We appreciate your effort and thank you for your inquiry.

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Best,

**Nicole A. Raslich, M.A.**
*Archaeological Technician*
Tribal Historic Preservation Office
Agua Caliente Band of Cahuilla Indians
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C: +1 (760) 985-3615
nraslich@aguacaliente.net

**From:** mblack@ultrasystems.com
**To:** "Ryan Nordness"
**Cc:** "Steve Oneil"
**Subject:** RE: Information Request for the Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Tuesday, October 18, 2022 3:15:44 PM
**Attachments:** image001.jpg

Mr. Nordness,

Thank you for providing the tribes response. We will pass on the tribe's request for AB 52 consultation to the Lead Agency, the City of Hesperia.

Best regards,

**Megan Black Doukakis** | Assistant Project Archaeologist | M.A.

**UltraSystems Environmental** | **WBE/DBE/SBE/WOSB**
16431 Scientific Way Irvine, CA 92618
Office **949.788.4900 Ext. 228** Fax 949.788.4901
Cell 310.850.8127

**Please note that I am working remotely. I can best be reached via email or cell.**

Description: Ultrasystems logo2.tif

please consider the environment before printing this e-mail. Thank you.

*E-Mail Confidentiality Notice: The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. This message may be an attorney-client communication and/or work product and as such is privileged and confidential. If the reader of this message is not the intended recipient, you are hereby notified that you have received this document in error and that any review, dissemination, distribution, or copying of this message is strictly prohibited. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.*

**From:** Ryan Nordness <Ryan.Nordness@sanmanuel-nsn.gov>
**Sent:** Tuesday, October 18, 2022 11:44 AM
**To:** mblack@ultrasystems.com
**Cc:** Steve Oneil <soneil@ultrasystems.com>
**Subject:** Information Request for the Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Megan,
Thank you for reaching out to the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians) concerning the proposed project area. YSMN appreciates the opportunity to review the project documentation received by the Cultural Resources Management Department on October 17th 2022. The proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the YSMN and the department is interested to consult whenever this project moves into AB52/CEQA territory.
Thank you again for your correspondence, if you have any additional questions or comments please reach out to me at your earliest convenience.
Respectfully,
Ryan Nordness

**Ryan Nordness**
Cultural Resource Analyst
Ryan.Nordness@sanmanuel-nsn.gov
O:(909) 864-8933 Ext 50-2022
M:(909) 838-4053
26569 Community Center Dr Highland, California 92346

---

**From:** Quechan Historic Preservation Officer
**To:** mblack@ultrasystems.com
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 7:50:34 AM
**Attachments:** image001.jpg

This email is to inform you that we have no comments on this project. We defer to the more local Tribes and support their decisions on the projects.

---

**From:** Steve Oneil
**To:** "THPO Consulting"; Megan Black; "THPO Consulting"
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 3:11:00 PM
**Attachments:** image002.jpg
image003.png

Good afternoon Ms. Raslich,

Thank you for your reply on behalf of the Agua Caliente Band regarding the Cargo Solution Truck Warehouse project in Hesperia. Your response will be placed in the cultural resources report.

Steve O'Neil

**Stephen O'Neil | Cultural Resources Manager | M.A./RPA**

**UltraSystems Environmental | WBE/DBE/SBE/WOSB**
16431 Scientific Way
Irvine, CA 92618
Office **949.788.4900 ext. 276**
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Cell 949.677.2391

---

**From:** THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Sent:** Wednesday, October 12, 2022 3:07 PM
**To:** 'mblack@ultrasystems.com' <mblack@ultrasystems.com>; THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Cc:** 'Steve Oneil' <soneil@ultrasystems.com>
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Hello,

We appreciate your effort and thank you for your inquiry.

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Best,

**Nicole A. Raslich, M.A.**
*Archaeological Technician*
Tribal Historic Preservation Office
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# ATTACHMENT D

# CHRIS RECORDS SEARCH BIBLIOGRAPHY

## Report List

**7187 Cargo Warehouse Hesperia**

| Report No. | Other IDs | Year | Author(s) | Title | Affiliation | Resources |
|---|---|---|---|---|---|---|
| SB-00191 | NADB-R - 1060191; Voided - 73-12.2A | 1973 | SMITH, GERALD A. | ARCHAEOLOGICAL, HISTORICAL AND PALEONTOLOGICAL SITE SURVEY FOR COUNTY SERVICE AREA NO. 70 IMPROVEMENT ZONE "J", ASSESSMENT OF IMPACT AND RECOMMENDATIONS | SAN BERNARDINO COUNTY MUSEUM ASSOCIATION | 36-002208 |
| SB-02448 | NADB-R - 1062448; Voided - 91-8.5 | 1991 | LERCH, MICHAEL K. | CULTURAL RESOURCES ASSESSMENT OF SERENE HOMES TENTATIVE TRACT 13845, MORONGO VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA | MICHAEL K. LERCH & ASSOCIATES | |
| SB-02476 | NADB-R - 1062476; Voided - 91-11.6 | 1991 | MCKENNA, JEANETTE A. | A PHASE I LINEAR SURVEY: CULTURAL RESOURCES INVESTIGATIONS FOR THE HESPERIA IMPROVEMENT DISTRICT, HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA | MCKENNA ET AL. | |
| SB-02732 | NADB-R - 1062732 | 1992 | PARR, ROBERT E. | AN ARCHAEOLOGICAL ASSESSMENT OF TENTATIVE PARCEL MAP #14242 BALDY MESA, SAN BERNARDINO COUNTY,CA | CSUB | 36-004179 |
| SB-04036 | NADB-R - 1064036 | 2004 | CERRETO, RICHARD and CHRISTY MALAN | CULTURAL RESOURCE ASSESSMENT FOR PARCEL 3, APN: 3064-591-17, CITY OF HESPERIA, SAN BERNARDINO COUNTY, CA. 18PP | ANALYTIC ARCHAEOLOGY | 36-020263 |
| SB-04284 | NADB-R - 1064284 | 2001 | ALEXANDROWICZ, JOHN STEPHEN | HISTORIC ARCHAEOLOGY AT JOHN E. DUFTON'S HOMESTEAD. 134 PP | ACS | 36-010287, 36-010288 |
| SB-04285 | NADB-R - 1064285 | 2004 | GREEN, JULIA K. | CULTURAL RESOURCES INVENTORY & EVALUATION: TIMBISHA SHOSHONE HOTEL & CASINO, SAN BERNARDINO COUNTY, CA. 22PP | ECORP | |
| SB-05107 | NADB-R - 1065107 | 2002 | CHANDLER, EVELYN N, COTTERMAN, CARY D, and MASON, ROGER D | CULTURAL RESOURCES SURVEY OF THE PROPOSED CALIFORNIA CHARTER ACADEMY HESPERIA, SAN BERARDINO COUNTY, CALIFORNIA | | |

# ATTACHMENT E

# CONFIDENTIAL DPR CONTINUATION SHEET –

# CRM TECH 3937-1H

Site 36-010288 was first record in August 2000 as a historic campsite/homestead site comprised of a trail/dirt road, running in a general northwest to southeast direction, and a refuse scatter consisting of 2 features, architectural debris and a refuse scatter (Alexandrowiez 2000). The site measured approximately 209 x 140 feet in size.

The site was later updated in July 2015 by McKenna. She expanded the original site boundary to include the entire homestead which measured a ½ x ½ mile in size. According to the site record the homestead was established in 1892 by John E. Dufton in the southwest quarter of Section 22 (McKenna 2015). McKenna recorded 13 features, artifact concentrations, and artifacts within the homestead consisting of a dirt road alignment, 1 large refuse scatter with over 100 items, and 9 isolated finds of historic artifacts (McKenna 2015). These resources were located just south of Poplar Street.

The site was revisited on August 31, 2022, during a Phase I field survey of the study area (APN 3064-591-13). The majority of the southern half of the Dufton homestead has been developed for commercial purposes. The recorded refuse scatter and the remnants of a building have been destroyed by the construction of a truck stop. The additional artifacts that McKenna recorded in 2015, along the northern boundary of the property, adjacent to Poplar Street have also been obliterated by the constant clearing of the property of vegetation. During the 2022 survey, it was observed that the property has been recently cleared again, leaving piles of vegetation and modern trash, with no evidence of the resources recorded by McKenna et al. in 2015.

Additional historic artifacts were found during the survey that had not been recorded before. These additional artifacts are located approximately 390 feet south of Poplar Street and 300 feet west of the I-15 Freeway, adjacent to the eastern boundary, but within the boundaries of Site 36-010288. The historic refuse scatter includes two flat-top beverage cans, two round meat cans, and a hinged tobacco tin in addition to approximately 15 historical bottle body fragments with a range of colors (opaque white, colorless, aqua, brown, sun-colored amethyst) along with an aqua bottle base fragment containing the broken text "DR. W…". The refuse scatter appears to be a single episode of household refuse dumping.

The refuse scatter has been heavily disturbed and distributed by the clearing activities that have taken place on the property. No other artifacts were observed within the boundaries of the homestead.

**References Cited:**

Alxandrowicz, J.S.
2000 California Historical Resources Inventory record forms, Site 36-010288. On file, South Central Coastal Information Center, California State University, Fullerton.

McKenna, Jeanette et al.
2015 California Historical Resources Inventory record forms, Site 36-010288. On file, South Central Coastal Information Center, California State University, Fullerton.

**Report Citation:** O'Neil, Stephen, Brent Johnson and Megan Black Doukakis (2022), *Phase I Cultural Resources Inventory for the Cargo Solutions Truck Warehouse, City of Hesperia, San Bernardino County, California*. UltraSystems Environmental, Irvine, California. Prepared for Cargo Solutions Express, Fontana, California.

State of California—Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

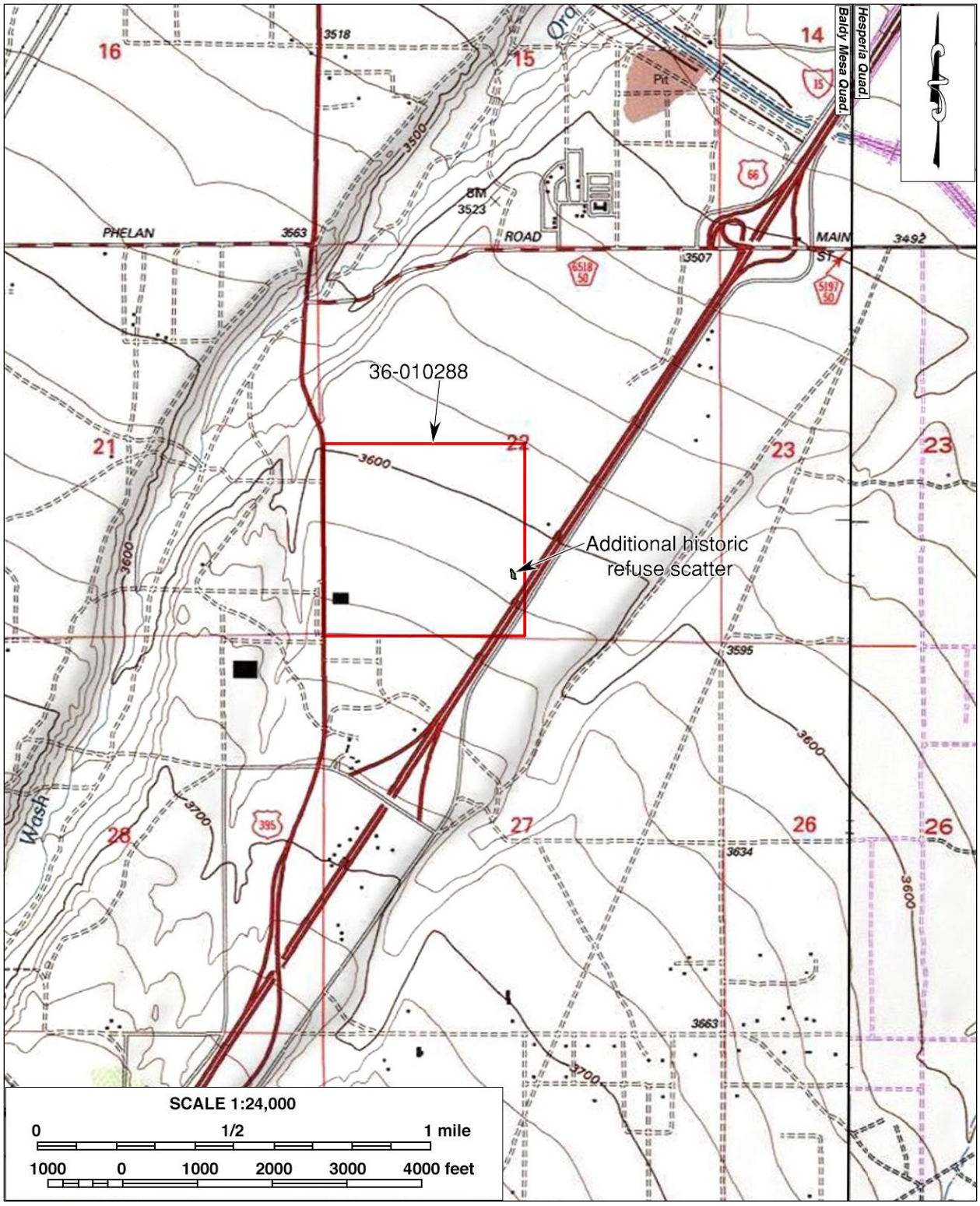
# LOCATION MAP

**Primary #** 36-010288H
**HRI #**
**Trinomial** CA-SBR-10288H



***Resource Name or #** (Assigned by recorder) 36-010288 update

***Map Name:** Baldy Mesa & Hesperia, Calif. ***Scale:** 1:24,000 ***Date of Map:** 1996; Revised 1980






*Required information

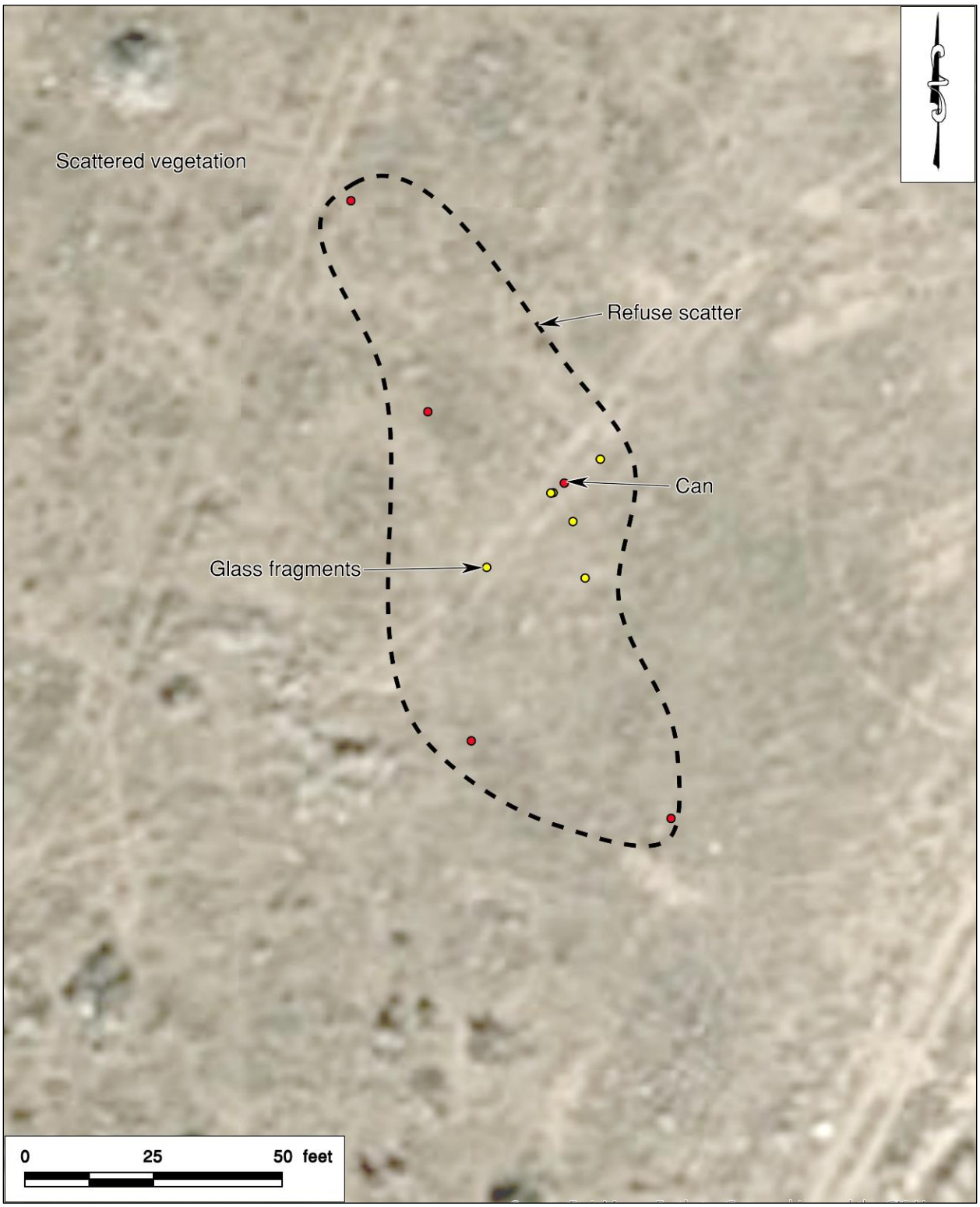
State of California—Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

# SKETCH MAP

**Primary #** 36-010288H
**HRI #**
**Trinomial** CA-SBR-10288H

**Page** 3 **of** 3 ***Resource Name or #** (Assigned by recorder) 36-010288 update

***Drawn by:** Daniel Ballester ***Date:** September 2, 2022






NOTE: Include bar scale and north arrow

# PHASE I
# CULTURAL RESOURCES INVENTORY
# FOR THE
# CARGO SOLUTIONS TRUCK WAREHOUSE
# CITY OF HESPERIA
# SAN BERNARDINO COUNTY, CALIFORNIA

***Prepared for:***
Bobby Kang, Owner
**Cargo Solutions Express**
14587 & 14589 Valley Boulevard
Fontana, CA 92335

***Prepared by:***

Stephen O'Neil, M.A., RPA
Brent Johnson, M.A.
Megan Black Doukakis, M.A.

**UltraSystems Environmental Inc.**
16431 Scientific Way
Irvine, CA 92618
(949) 788-4900

**October 25, 2022**

Key Words: City of Hesperia; San Bernardino County; *Baldy Mesa, Calif*. USGS Quad.; Serrano tribe; Positive Results; Historical Resources

# PHASE I
# CULTURAL RESOURCES INVENTORY
# FOR THE
# CARGO SOLUTIONS TRUCK WAREHOUSE,
# CITY OF HESPERIA,
# SAN BERNARDINO COUNTY, CALIFORNIA

**Cargo Solutions**
**Attention: Express Bobby Kang, Owner**
**14587 & 14589 Valley Boulevard**
**Fontana, CA 92335**

## October 25, 2022

Reviewed by: _____ Date: October 25, 2022

Stephen O'Neil, M.A., RPA
UltraSystems Environmental Inc.

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## ATTACHMENTS


**Attachment A** Project Maps

**Attachment B** Personnel Background

**Attachment C** Native American Heritage Commission Records Search

**Attachment D** CHRIS Records Search

**Attachment E** **CONFIDENTIAL** DPR Continuation Sheet - CRM TECH 3937-1H

# 1.0 INTRODUCTION

## 1.1 Overview

This Phase I Cultural Resources Inventory report was prepared by UltraSystems Environmental (UEI) at the request of Cargo Solutions Express, Inc. This study is for the Cargo Solutions Warehouse in the City of Hesperia.

The proposed project includes the development of three buildings that include two warehouse and office buildings and one drive-thru truck wash building for a total of 133,995 square feet. This project also includes 221 parking spaces, loading docks, tractor-trailer stalls, and landscaped areas. The project area covers approximately 19 acres of vacant land. It is situated on APN parcels 3064-631-01, 3064-591-13, 3064-591-12, 3064-591-17, and 3064-591-18, The project site is located in the west-central portion of Hesperia east of U.S. Route 395 and west of the Interstate 15 (I-15) Barstow Freeway. UEI conducted this cultural resources study to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The project is located in the City of Hesperia (see **Attachment A, Figure 1** and **Figure 2)**, and is specifically located south of Poplar Street, east of Three Flags Avenue, and west of I-15, and can be seen on the *Baldy Mesa, Calif*., USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼ of Section 22 (see **Attachment A, Figure 3).** The background research and archival study included a one-half mile buffer surrounding the project site (see **Attachment A, Figure 3).** The project is located in a developing area in the western portion of the city and is surrounded by vacant, undeveloped desert land, as well as commercial/industrial properties.

### 1.1.1 Area of Potential Effect

The Area of Potential Effect (APE) for the undertaking encompasses the maximum extent of ground disturbance required by the project design (see **Attachment A**, **Figure 2**). The surface area of the APE is approximately 19.22 acres. All of this area is subject to direct ground disturbances during construction.

## 1.2 Methods

A cultural resources records search was completed at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, which is the local California Historic Resources Information System (CHRIS) facility. The records search was conducted to identify previously recorded cultural resources (prehistoric and historic archaeological sites/isolates, historic buildings, structures, objects, or districts) within the project area and also to determine previous cultural resource surveys. The project site and a 0.5-mile buffer zone are included in the search radius for archival studies. These records included a review of previously recorded prehistoric and historic archaeological resources and a review of listed cultural resource survey reports within that same geographical area. The cultural resources record search was conducted by Megan B. Doukakis, M.A, Assistant Project Archaeologist.

Stephen O'Neil, M.A., RPA, who qualifies as a Principal Prehistoric Archaeologist and Historic Archaeologist per United States Secretary of the Interior Standards (see **Attachment B**), contacted the Native American Heritage Commission (NAHC) requesting a Sacred Lands File (SLF) search and

contact information of local Native American tribes. Ms. Doukakis and Brent Johnson, M.A., contributed to this report.

## 1.3 Disposition of Data

This report will be filed with the SCCIC, California State University, Fullerton; the City of Hesperia Planning Department; and UltraSystems Environmental, Inc., Irvine, California. All field notes and other documentation related to the study will remain on file at the Irvine office of UltraSystems.

# 2.0 SETTINGS

## 2.1 Natural Setting

The City of Hesperia is one of four incorporated cities in the Victor Valley region of San Bernardino County. The city is located in the transitional area between the foothills of the San Bernardino Mountains to the south and the Mojave Desert to the north and is situated in a geomorphic province on volcanic rock with upper soils characterized by light to dark brown silty sand. The region's environment is characterized as a high desert due to its weather pattern and elevation of over 3,260 feet. The summers are hot and arid with the average daily temperature above 87 degrees Fahrenheit (° F), while the winters are cold and partly cloudy with average daily temperature of 64° F. Rainfall is typically 14.9 inches annually, most of which occurs between November and March.

The project site is located in the Mojave Desert, approximately nine miles south of the Mojave River and 3,500 feet east of the Oro Grande Wash. It is situated at an elevation ranging from 3,600 feet at the northeast corner to approximately 3,622 feet at the southwest corner, with a gentle slope to the northeast.

The Mojave Desert characteristically exhibits the grey-green shrubs of the creosote bush (*Larrea tridentata*) with areas exhibiting alkaline soils containing expressions of saltbush (*Atriplex* spp.). Plant species present in the general vicinity of the Project site include: juniper (*Juniperus californica*), annual bursage (*Ambrosia acanthicarpa*), Nevada jointfir (*Ephedra nevadensis*), bladder sage (*Scutellaria mexicana*), rabbitbrush (*Ericameria nauseosa*), and Joshua tree (*Yucca brevifolia*). Other plants noted in the area include saltbush (*Atriplex* sp.), schismus (*Schismus barbatus*), cholla (*Cylindropuntia echinocarpa*), bunchgrass (*Phleum pratense*), white bursage (*Ambrosia dumosa*), California buckwheat (*Eriogonum fasciculatum*), and brome grasses (*Bromus* sp.).

Typical Mojave Desert fauna include: bighorn sheep (*Ovis canadensis*), mule deer (*Odocoileus hemionus*), jackrabbit (*Lepus californicus*), cottontail, coyote, pronghorn, various reptiles (including the venomous Mohave rattlesnake and the notable chuckwalla) and rodents. Other animals include various species of waterfowl and numerous birds.

The project site boundary is underlain by Hesperia Loamy Fine Sand which is derived from parent material of granite alluvium. The soils are well drained with a depth of more than 80 inches to a restrictive feature, and the slope is two to five percent (The soil composition is based on observations, descriptions, and transects of the man unity) (USDA Web Soil Survey).

Geological features of the Mojave Desert Basin and Range geomorphic province are comprised of broad alluvial basins, and moderate relief mountain ranges and hills that consist primarily of Mesozoic granitic and Mesozoic to Precambrian metamorphic rocks. Cenozoic sedimentary and volcanic rocks and landforms are also common (PlaceWorks and Dudek 2017).

## 2.2 Cultural Setting

### 2.2.1 Prehistoric Context

Synthetic treatments of the prehistory of the Mojave Desert include topical studies by Basgall (1993), Basgall and McGuire (1988), Garfinkel (2007), Garfinkel et al. (2010), Gilreath and Hildebrandt (1997), Lengner (2013), Sutton et al. (2007), Van Tilburg et al. (2012), Warren (1984), Warren and Crabtree (1986), Whitley (1998), and Yohe (1992).

The Mojave Desert has seen more archaeological study than many other areas of California. It has also spawned some of the most contentious dialogues in professional archaeology with respect to competing prehistoric cultural sequence models. Given the importance of chronological controls, the prehistoric cultural sequence and related temporal periods remains an important topic for continuing research.

**Cultural Sequence**

**Late Pleistocene: Paleo-Indian / Western Clovis Period**

The Clovis (aka Western Clovis) cultural complex is generally considered to be the dominant prehistoric occupation during the Late Pleistocene era. Clovis points and their associated cultural materials have been the focus of intensive study and the general consensus is that they date from about 13,500 to 12,500 calibrated radiocarbon years (cal) before present (BP) (cf. Goebel et al. 2008; Waters and Stafford 2007).

Although the Mojave Desert has seen early claims of great human antiquity, even Clovis-like fluted points discoveries themselves are fairly rare (cf. Rondeau et al. 2007). Besides the limited discoveries of fluted points, we have little in the way of related diagnostic elements of Clovis technology that would provide a more complete picture of the entire archaeological assemblage.

**Early Holocene: Mojave or Lake Mojave Period**

Significant environmental changes occurred in the post-Pleistocene resulting in the infilling of valleys and basins by streams, marshes, and lakes from increased glacial runoff. During this time there exists a well-established and wide-ranging prehistoric tradition in the Mojave Desert dating from ca. 12,000 to 8,000 cal BP with a hunting emphasis on lakeshore resources (cf. Bedwell 1970; Warren 1967, 1986; Warren and Crabtree 1986).

Milling equipment, although evidently only a minor element in the Lake Mojave archaeological assemblages, is also a regular part of the documented cultural materials at sites attesting to a wider range of habitats for sites outside of lakeshore settings (Basgall 1993).

**Middle Holocene: Little Lake or Pinto Period**

In the Middle Holocene from ca. 8,000 to 4,000 cal BP temperature and aridity peaked. Lowland bodies of water shrank in size, associated plant communities dwindled and, with the exception of certain rare refuge areas, human land use shifted to upland areas (Sutton et al. 2007). Correlating with these changes was the inception of a cultural expression known as the Pinto Complex.

The presence of ground stone implements signals a growing emphasis on small seed use. Since hunting equipment persisted during this time frame, Claude Warren and others (Warren 1967, 1984, 1986) have suggested that large game procurement continued despite deteriorating climatic conditions and declining big game populations. Heavily worn stone tools crafted from exotic stone suggests that prehistoric Middle Holocene Natives were still highly mobile.

**Middle/Late Holocene: Newberry Period or Gypsum Complex**

In the Late Holocene, beginning ca. 4,000/3,500 cal BP and continuing to about 2,000 cal BP, significant interregional variability in aboriginal land use is recognized. Cool winters and relatively

wet intervals were characteristic of what is known as the Neo-Pluvial Period that occurred between 4,000 and 2,000 radio carbon years before present (rcybp) (Wigand and Rhode 2002).

Radiocarbon assays and obsidian tool/debitage sources in the Mojave Desert suggest that particular sites were seasonally re-occupied (Basgall and Hall 1992, 1994). From food remains one may infer that logistical forays were made to long-distance upland settings to procure specialized resources (pinyon nuts, bighorn sheep, and marmots) that were brought back to a base camp (Basgall and Delacorte 2012; Basgall and McGuire 1988; Byrd and Hale 2003). Warren et al. (1984) identify a change in social organization from the smaller family-band units in earlier eras to multi-family groups.

**Late Holocene: Haiwee, Rose Spring, Saratoga Springs Period**

The Mojave Desert witnessed a significant series of adaptation shifts beginning in this time period (ca. 2000 to 700 cal BP). During the onset of the period a dramatic set of subsistence-settlement changes were documented. These changes include: the introduction of the bow and arrow replacing the dart and atlatl, a dramatic decrease in large game hunting, increased reliance on dryland hard seeds, the beginning of intensive green-cone piñon pine nut exploitation, and the development of sites emphasizing the acquisition of easily procured and abundant small game animals (especially with respect to large numbers of lagomorphs and grebes). These cultural changes may reflect a Numic (Great Basin Paiute-Shoshone) in-migration. Certain technological innovations and labor-intensive adaptive strategies are also broadly consistent with those of the intrusive Numic groups (Bettinger and Baumhoff 1982; Delacorte 1994, 1995).

**Recent Holocene: Marana, Late Prehistoric**

This final cultural period (700 cal BP to the historic) represents the ethnographic occupation of the Mojave Desert by the Kawaiisu, Panamint Shoshone, Serrano, Chemehuevi, and Mohave, with the Tataviam and Alliklik utilizing the western margin of the Desert. Desert Side-notched and Cottonwood arrow points, brownware ceramics, imported soapstone beads, pictographs, and many sites associated with systematic and intensive upland piñon exploitation are all characteristic of this time frame (Bettinger 1978; Garfinkel et al 1980; McGuire and Garfinkel 1976, 1980).

Resource intensification that began in the prior period continued and strengthened with settlements tied to seasonal differences in resource availability. Region-wide expansion of diet breadth, including an increase in desert tortoise and reptile use, and intensification of small seed resources involved a change in the technology used in the collection and processing of these resources. This pattern began about 1300 cal BP but increased substantially throughout the Late Prehistoric (650 cal BP – Contact) and into the Protohistoric era.

Evidence of increased contact with outside populations (e.g., the American Southwest) and the expansion of Numic-affiliated populations out of eastern California into most areas of the Great Basin and much of the Mojave Desert are recognized during the last 1,000 years (Fowler 1972; Lamb 1958).

Geospatial analyses of known prehistoric sites in inland Southern California suggest that longer-term residential settlements of the Native population were more likely to occur in sheltered areas. Such locations were near the base of hills and/or on elevated terraces, hills, and finger ridges. Further, these favored locations were near permanent or reliable sources of water. These were areas that were largely level encampments situated on the unprotected valley floor. The residential sites were used for resource procurement and travel. The use of such geographical settings is supported by the

ethnographic literature. These reports identify the foothills as preferred areas for settlement (Bean and Smith, 1978a; 1978b). The project area is situated on open desert land with no hills nearby, with a major wash to the northwest, a suitable location for prehistoric seasonal camp sites.

### 2.2.2 Ethnohistoric Context

The western Mojave Desert was home to groups of Northern Uto-Aztecan speakers, primarily the Serrano (Vanyume), with the Kitanemuk, Tataviam, and Kawaiisu in the Antelope Valley portion to the northwest . The groups traded and interacted with each other. Additionally, each group had its own trade and alliance relationships with other groups who lived outside the valley.

Recent research by Earle (1990, 1997, 2004a, 2004b, 2005a, 2005b), King (2003), and Johnson and Lorenz (2006) have helped to clarify the ethnic identification of the Mojave Desert Native American groups. Their work with the John Peabody Harrington field notes, combined with analysis of the Franciscan mission sacramental registries, testify that the Mojave Desert dwellers in the Hesperia area were speakers of a dialect of Serrano. Surviving vocabularies and word lists support the identification of desert groups known as Vanyume (Garcés' term was Beñeme) as related to the Serrano. It has been further determined that Native groups occupying villages on the Mojave River in the vicinity of Victorville immediately north of Hesperia and in the region east of Barstow maintained marriage ties to downriver communities and were also Vanyume in ethnic and linguistic affiliation. Earle (1990, 1997) supports King's revisions of earlier territorial boundaries asserting that Serrano territory included the northern slopes of the San Gabriel Mountains, the Mojave River, and Antelope Valley. It also appears from their research that both the south and north slopes of the San Gabriel Mountains were "owned" and occupied by Serrano speakers.

Early 20th century ethnographic fieldwork among the Serrano was conducted by Kroeber (1925), Gifford (1918), Strong (1929), Benedict (1924), and Harrington (1986). More recent research by Bean (1972), Bean and Smith (1978), and Bean, et al. (1981) has helped to focus attention on key research questions in an attempt to clarify the relationship of Serrano land use patterns, territorial attributions, subsistence-settlement patterns, and social, ceremonial, and political organization.

The economic resource base of the Vanyume was determined in part by the seasonal availability of key animals and plants exploited for basic subsistence (Earle 1992). Hunting activities supplemented a diet mainly emphasizing plants. Hunting excursions were both an individual affair but also incorporated communal drives, and trap lines to snare small animals (e.g., squirrels, rodents, tortoise, and chuckwalla). Some desert hunting areas to the east in the Mojave Desert and in the vicinity of the Mojave River may have been shared with adjacent groups (e.g., Chemehuevi and/or Mojave). Mule deer were available in the San Gabriel Mountains. Deer would migrate to lower elevations during the winter and would be available in the lower foothill region at that time. Pronghorn frequented the valley floor year-round but were not consistently abundant and were hunted only occasionally using communal surrounds and group drives. The latter communal drive technique was also used to ensnare large numbers of jackrabbits during the fall when the rabbits were especially abundant. Mountain sheep were available in the higher mountains but would only have been rarely procured. Waterfowl could be captured using bows and arrows and special nets. Ducks, quail, geese, and grebes would have been available in considerable numbers during their breeding seasons and in association with riparian settings.

Abundant stands of acorns, juniper, mesquite, and pinyon were available to extended gathering expeditions into the mountains. These might involve several lineages collaborating under one leader's authority and would have entailed accessing the resource base of surrounding groups (Bean and Smith 1978; Benedict 1924:391-392; Drucker 1937). Cattail / bulrush seeds (*Typha* spp. and

*Scirpus* spp.), various roots, shoots, bulbs, and other hard seeds were all principal plant foods. The most likely plant resources that were of significant economic importance that have been identified paleobotantically or noted in the immediate vicinity of the Project were Indian rice grass (*Achnatherum hymenoides*), chia (*Salvia columbariae*), blazing star (*Mentzelia* spp.), and goosefoot (*Chenopodium* spp.)

Edward W. Gifford conducted a detailed study of the marriage practices and sociopolitical organization of native southern California Native Americans from 1916 through 1917 (Gifford 1918). Based on these studies, he developed a model of Serrano social organization (Earle 2004a, 2004b). William Duncan Strong (1929: 5-35) conducted even more extensive social organization studies among the Serrano, Cahuilla, Luiseño, and Cupeño in 1925. Strong indicated that the Serrano were an unusual California group in that they possessed true patrilineal clans and an active moiety system. Patrilineal clans are patterned such that all males, their descendants, and their wives were part of a single group. Clans may be segmented into subclans or lineages. A woman retained her own lineage name but upon marriage was incorporated into the clan of her husband. The transfer of women from one ceremonial affiliation with one clan to another, upon marriage, was characteristic of all southern California Takic (the linguistic subfamily of Northern Uto-Aztecan) speaking groups. In the Serrano case, their society was divided into two parts identified with either Coyote or Wildcat. The Coyote moiety had the most important political leaders. Moiety out-marriage excluded partners from half the neighboring Serrano settlements. Hence, only settlements of opposing moieties were interrelated through marriage.

Serrano villages in the Mojave Desert were generally more dispersed than in the mountain setting. This dispersed pattern resulted in marriages linking together very large areas. Many of the settlements had marriage ties with villages over 50 miles away and counter intuitive was the fact that the closest relationships were not with the nearest villages – but rather with settlements affiliated with opposing moieties further distant. King's study of the mission registers indicates that there were many important hereditary positions among the Serrano recognizable in name identities. Each village contained a chief, ceremonial manager, two messengers, as well as various shamans, diviners, and other ritual specialists. Each of these leaders oversaw different elements of Serrano life involving festivals, dances, and warfare.

Ethnographic data attests that a major native trade and travel corridor facilitated a long-distance exchange system. Recent research has supported the importance of long-distance trade linking coastal southern Californian Chumash tribes with inland groups including the Yokuts, Kawaiisu, Serrano, Chemehuevi, and the Mojave in California, and with the Walapai, Havasupai, and Hopi in Arizona (Earle 2005a). Shell bead trade was one of the mediums of exchange and was used as a kind of currency or money. This system was significant since it involved trade, travel, and exchange covering hundreds of miles and was a system of exchange of native goods that linked various ethnic groups politically and economically. This trade and travel route ran from the American Southwest (principally the Hopi territory in Arizona), along the Colorado River to the Mojave River thence through the central Mojave Desert into the Antelope Valley (Serrano territory) and west to the Pacific Coast (Davis 1961; Farmer 1935; Sample 1950). These circuits of exchange cut across political and cultural boundaries. A number of researchers have argued that such an exchange system may have been an influential factor in facilitating semi-sedentary settlement and complex sociopolitical organization for the Serrano (Earle 2005a; Robinson 1977; Sutton 1980).

### 2.2.3 Historic Context

#### 2.2.3.1 Spanish/Mexican Era

The first known European explorer to pass through the Hesperia region of the Mojave Desert was Lt. Pedro Fages, an officer of the Spanish Army. While tracking military deserters in 1772 he entered the desert through the Cajon Pass and traveled northward along the eastern edge of the San Gabriel Mountains, through the southern edge of the Mojave Desert, the Hesperia region and onto what is now western Palmdale, and then up to Elizabeth Lake before returning to the coast. Soon afterwards, Franciscan Fr. Garcés, starting from Arizona with the de Anza expedition of 1775, split from the expedition at the Gila River crossing along the Colorado River and headed north on his own through the Mojave Desert. He reached Mission San Gabriel the following year and his route became the Mojave Trail. Despite these early visits, for the next 40 years this inland valley received little impact from Spanish colonization activities, which were concentrated along the coast.

Mission San Gabriel, founded 1772, became the primary missionizing force in the south and central Mojave Desert, baptizing members of the Serrano tribe. When Mission San Fernando was established farther north in 1797, the priests here proselytized in the western and northern Mojave Desert bringing in members of the Tataviam, Kitanemuk and Alliklik tribes. Spanish rule was overthrown by Mexico in 1812, and the missions lost their land holdings to private ranchos as the Mexican government passed the Secularization Act in 1833 (Beattie and Beattie 1951). The notable Old Spanish Trail was established between southern California and Santa Fe, New Mexico in the 1830s (Beck and Haase 1974).

For most of the Spanish-Mexican Period, the entire San Bernardino Valley below the Cajon Pass into the desert was considered a part of the land holdings of Mission San Gabriel. The name "San Bernardino" was bestowed on the region circa 1819, when the mission *asistencia* and an associated rancho were officially established under this name in the eastern area of the valley (Lerch and Haenszel, 1981). Spanish rule was overthrown by Mexico in 1812, and the missions lost their land holdings as the Mexican government passed the Secularization Act in 1833 (Beattie and Beattie 1974). The notable Old Spanish Trail was established between southern California and Santa Fe, New Mexico in the 1830s (Beck and Haase 1974). In 1848, when the southwest was ceded to the United States, most of the Mexican land grants became areas of public domain, and raising livestock gave way to agriculture (Schuiling 1984).

#### 2.2.3.2 The American Period to Founding of Hesperia

In 1851, Mormons settled in the San Bernardino Valley when Brigham Young asked church followers to start a new colony in California (Beattie and Beattie 1951, Lyman 1996). The Mormons traveled 400 miles from Salt Lake City to San Bernardino along a route that came to be known as "the Mormon Trail." The last leg of the trip required navigating the Cajon Pass out of the desert in the San Bernardino Mountains before descending into the San Bernardino Valley. The Mormons had made plans to purchase the Chino Ranch from Isaac Williams. However, he had changed his mind about selling it when they arrived (Schuiling 1984, Lyman 1996), and they purchased a large portion of José del Carmen Lugo's Rancho San Bernardino along the Santa Ana River. Because of the debt that the purchase of this land created and the need to demonstrate to church leaders in Salt Lake City that the colony was productive, the Mormons quickly developed crop cultivation in the valley and lumbering in the foothills of the San Bernardino Mountains. Lumber was such an important cash commodity that it was called the "Mormon currency" (Schuiling 1984: 45). The Mormons also planted fruit trees and vineyards and built a flour mill. The Mormons were instrumental in establishing San Bernardino

County in 1851 and the city of San Bernardino in 1854. However, when Brigham Young recalled the settlers to Salt Lake City in 1857, two-thirds of the original settlers abandoned the settlement, and the community began to develop in ways quite different from its original founding. Beattie and Beattie (1951) detail some of the changes after the Mormon exodus, such as an increase in crime. Lyman (1996) notes that the peaceful coexistence of the Mormons with the surrounding Indian tribes changed after the Mormon exodus, among other results being the further displacement of the Cahuilla and Serrano tribes.

In the late 1800s, the railroad came to San Bernardino County. Fierce competition between the Southern Pacific and Santa Fe lines led to price wars, which enabled many settlers from the Northeast and Midwest to be able to afford the long journey west. Southern Pacific had a monopoly in the county for a long time until Fred T. Perris surveyed the Cajon Pass, which allowed the Santa Fe Railway Company to link San Diego, San Bernardino, and Barstow by rail and thus break the monopoly. Cheap railroad transportation led to a land boom in the 1880s. In the 1870s and afterwards, small towns in the high desert region and near the Calico Mountains were established as railway stops on the Santa Fe Railroad (Kyle 1990). Approximately 30 new communities were established. Only about half have survived to the present day (Schuiling 1984). The growing population created a demand for a reliable source of water, which would lead to the further development of this arid region. The construction of the Bear Valley dam in 1884 created Big Bear Lake, which secured the future of the San Bernardino Valley as a place where people and agriculture could flourish with the impounded surface runoff from the winter snowpack. Replicating the success of the Bear Valley dam, Lake Arrowhead was completed in 1915.

In 1849, the Gold Rush was on and the discovery of gold in the San Bernardino Mountains brought an influx of miners to the area. Later, in the Mojave Desert to the northern and eastern portions of San Bernardino County, silver mining took precedence as gold was mined out, and then borate mining replaced silver mining. Mining continued as an important part of the county's economic base into the 20th century (Schuiling 1984).

World War II brought the beginning of a strong military presence in the county. Before World War II there were no permanent military installations in the area with the exception of March Field in neighboring Riverside County. Military installations established in San Bernardino County include the Mojave Anti-Aircraft Range in northern San Bernardino County; Fort Irwin training base near Barstow; the San Bernardino Air Depot of the Air Material Command, which became Norton Air Force Base in 1950; the Defense Supply Agency of the Department of Defense; 29 Palms Marine Base; George Air Force Base, which was a training facility for fighter pilots; and the navy bombing range at China Lake in the northwest part of the county, which expanded in 1943 and became the 750,000-acre Naval Ordnance Training Station that also lies partly in Kern and Inyo Counties (Schuiling 1984).

**History of Hesperia**

In 1869, Max Stobel purchased 35,000 acres along the Mojave River from the United States Government Land Office for $40,000. While several attempts were made to subdivide the land and encourage colonization, the area was primarily used for agricultural purposes, with raisin grapes being the primary crop (Yetzer 1988). A major turning point occurred in 1885, when the Atchison, Topeka and Santa Fe railroad tracks were completed, and the Hesperia Train Station was erected in 1887. The Hesperia railhead created the city's first major industry, which was the export of Juniper wood, used by Los Angeles bakers to fuel their breadmaking kilns (City of Hesperia 2022).

It was shortly after developer Robert M. Widney purchased a large parcel of this land in 1886 that work on the Hesperia Hotel began. In 1874 Widney had begun the first successful public rail transit company in Los Angeles, building a 1.5 miles (2.4 km) horse drawn trolly line between Los Angeles Plaza and 6th Street at Pearl Street. As one of most successful developers of his time, as well as District Judge for Los Angeles and San Bernadino Counties, founder of Los Angeles Chamber of Commerce and one of the founding members of the University of Southern California, he had every reason to expect his investment would prompt the rapid growth of Hesperia and the surrounding area (LA Pub Lib 1923). The hotel took over two years to build and was constructed using over 40,000 handmade adobe bricks. It was a three-story structure with a basement. There was a communication system between all three floors, as well as hot and cold running water available in the restroom on each floor. The Hesperia hotel was in its glory from 1887 until it officially closed in 1926 (Digital Desert 1981).

Hesperia was named for Hesperus, the Greek god of the West. The railroad land developers published pamphlets distributed across the country with boosterism of Hesperia, California, as a potential metropolis, to become "the Omaha of the West" with projections of over 100,000 people by 1900 -- but only 1,000 arrived by the century milestone (Yetzer 1988). Hesperia grew relatively slowly until the completion of US Routes 66, 91, and 395 in the 1940s, followed by the expansion and re-routing of the old Route 66 into Interstate 15 in the late 1960s. The City served as the last stopping point before travelers made the treacherous trip down the Cajon Pass. About 30 square miles (78 km2) of land were laid out for possible residential development (Logan 2014).

In the early 1950s, land developer M. Penn Phillips and his silent financial partner, boxer Jack Dempsey, financed the building of roads and land subdivisions, promoting lot sales via the new medium of television. They built the Hesperia Inn and golf course, which attracted a variety of Hollywood celebrities. The Hesperia Inn also housed the Jack Dempsey Museum (Streitfield 2007). In 1955, Phillips was president of Hesperia Land Development and Hesperia Sales Corporation, while conceiving the *U-Finish Home*—mass-produced housing units that were finished on the outside leaving the buyer to complete the interior. In 1959 Phillips served as a member of the committee to form the Mojave Water Agency (MWA), a regional water management agency that secured a contract with the State of California for an allocation of imported water supply from the State Water Project (Time 1959). The MWA is responsible for managing groundwater resources in the Mojave River Basin and Morongo Basin and providing alternate water sources to the region as needed. It is one of 29 State Water Project contractors permitted to deliver water from the California Aqueduct. The MWA serves a 4,900 square mile area in the High Desert of San Bernardino County, including the Hesperia area (Mojave Water Agency 2020).

The main wave of newcomers, though, arrived at Hesperia in the 1980s and the City was officially incorporated in 1988. Suburban growth transformed the small town of 5,000 people in 1970 to a moderate-sized city with a population over 60,000 by 2000, and an estimated population over 95,000 as of July 1, 2018 (US Census Bureau 2021; Logan 2014).

#### 2.2.3.3 Project Site Land Use History

**Historic Topographic Maps**

The available United State Geological Survey (USGS) 7.5' topographic maps for the project area start with the 1902 *Baldy Mesa, Calif.* (USGS, 1902) topo map. This map shows open desert land in the project site and area. The elevation contours indicate that the gradient slopes toward the northeast with a 3.6 percent slope over approximately one mile. The 1942 USGS map (USGS 1942) shows the

property is transected (north/south) by what appears to be a dirt trail or four-wheel drive road. The US Route 66 (to the east) and US Route 395 (to the west) are depicted as primary roads/highways.

The 1956, 1968, 1980, 1988 topo maps (USGS 1956, 1968, 1980, 1988) show that the property is undeveloped, vacant land. US Route 395 is depicted as a secondary highway and Interstate 15, which was reconfigured during this period from US Route 66, is depicted as a highway with a median strip.

The 1996 topo map (USGS 1996) shows there is a large commercial building west of the project site at 8981 US-395 (which is currently occupied by the 3M Company).

The 2018 topo map (USGS 2018) shows that Poplar Street (the northern boundary of the project area) and Three Flags Avenue (the western boundary of the project area) are now present and depicted as durable, all-weather roads. To the south of the project boundary is Muscatel Street.

**Historic Aerial Images**

Historic aerial photos are available for this area of Hesperia; the earliest dating to 1938 (NETRonline 1938, 1952). The 1938 and 1952 aerial photos show that the property is undeveloped desert scrubland. The east side of the property is bounded by what appears to be a two-lane, all-weather road (US Route 66). The west side of the property is undeveloped, vacant land and there is faint evidence of a dirt road or trail that runs north to south.

The 1968 and 1985 aerial photos (NETRonline 1968, 1985) show that Interstate 15 to the east has been improved from a two-lane to a four-lane all-weather highway, indicating the transition from the earlier US Route 66.

The 1994 aerial photo (NETRonline 1994) shows that Poplar Street, which is the approximate northern boundary of the project area, has been developed with a durable, all-weather road. The approximate western boundary of the project area, which is Three Flags Avenue, appears to be an unimproved dirt road. In addition, the approximate southern boundary of the project area is a dirt access road. The land adjacent to the southwest of the subject property along Scarbrough Court appears to have been graded, likely for development. The 2002 aerial photo (NETRonline 2002) shows that the adjacent property to the south has been developed (with Zippy Lube A Truck and Little Sisters Truck Wash at 8899 Three Flags Road).

The 2009 aerial photo (NETRonline 2009) shows that the adjacent property to the southwest has been developed with Velocity Truck Centers (at 8995 Three Flags Avenue). In addition, the land to the west of the subject property and southwest of the intersection of Poplar Street and Three Flags Avenue, is developed (with Freedom Auto Repair, Donna Star Foods, and Hemingway Sheet Metal, Inc. at 12221). The 2014 and 2018 aerial photos (NETRonline 2014, 2018) show few discernable changes from the previous 2009 aerial photo.

# 3.0 RESEARCH METHODS

The cultural resources inventory and related archival research included a background cultural resources records check (archival research) at the SCCIC, California State University, Fullerton. Additionally, a SLF search was requested from the NAHC.

## 3.1 Records Search

A cultural resource records search was was conducted at the SCCIC on October 4, 2022, by Ms. Megan B. Doukakis. That research was completed to identify cultural resources on or near the project site. The local CHRIS facility for San Bernardino County maintained at the SCCIC was reviewed to identify resources that have been previously evaluated for historic significance, as well as to identify any previous completed cultural resources survey reports.

Also searched and reviewed were the official records and maps for cultural resources and surveys in Hesperia, National Register of Historic Places (NRHP); Listed Properties and Determined Eligible Properties (2012), and the California Register of Historical Resources (CRHR) (2012).

For the current study, the scope of the records search included a 0.5-mile buffer zone from the project's footprint (see **Attachment A, Figure 3**). The research effort was completed to assess the sensitivity of the project site for both surface and subsurface cultural resources and to assist in determining the potential to encounter such resources, especially prehistoric—i.e., Native American—cultural remains, during earth-moving activities associated with construction of the proposed project.

## 3.2 Field Survey

On August 31, 2022, archaeologists Daniel Ballester and Hunter O'Donnell visited the project site to conduct a pedestrian survey. During the survey, the project site was carefully inspected for any indication of human activities dating to the prehistoric or historic periods (i.e., 50 years or older).

## 3.3 Native American Outreach

On August 17, 2022, Mr. O'Neil contacted the NAHC via email notifying them of the project activities, requesting a search of their SLF and requesting a list of local tribal organizations and individuals to contact for project outreach. The NAHC replied on October 7, 2022 with a letter dated the same day reporting on the SLF search findings and a list of 20 tribal organizations and individuals to contact. Letters to local tribes were sent on October 11, 2022 to all of the tribal organizations and their representatives listed in the NAHC letter (**Attachment C**).

# 4.0 FINDINGS

## 4.1 Records Search

### 4.1.1 Recorded Archaeological Sites

Based on the cultural resource records search at the SCCIC, it was determined that two cultural resources were previously recorded within the project site boundary. Within the one-half-mile buffer zone, there are a further 10 recorded historic-era cultural resources. **Table 4.1-1** and **Table 4.1-2** summarizes these resources.

The two archaeological sites located in the project boundary consists of a single prehistoric isolate and an historic homestead. The prehistoric isolate (36-020263) is a small isolated pyroclastic nodule of obsidian located near the west end of the project boundary (Cerreto and Cunningham 2004). There are two or three small blade-like flakes removed from the nodule indicating a bipolar reduction technique was used. An historic homestead (36-010288) covered a quarter section of land that includes the project boundary (Alexandrowicz 2000; McKenna. 2015). This 160-acre area was homesteaded by John E. Dufton in 1892. Structural debris and historic refuse scatters were present during the 2000 and 2005 surveys but no structural remains from the homestead were identified. No features were identified with the current project boundary.

**Table 4.1-1**

**KNOWN CULTURAL RESOURCES WITHIN THE PROJECT AREA**

| Site Number | Author(s) | Date | Type | Description |
|---|---|---|---|---|
| 36-004275,<br>CA-SBR-4275H | Robert E. Reynolds<br>Edward Knell<br>Kenneth Becker and Jodie Phillips<br>Cary D. Cotterman | 1980<br>1991<br>1993<br>2002 | Historic | Toll Road-Houghtons Crossing Road. A rounded dirt road running through a creek. |
| 36-010288,<br>CA-SBR-10288H | J. S. Alexandrowicz<br>Jeanette A. McKenna | 2000<br>2015 | Historic | John E. Dufton Homestead. |

| Site Number | Author(s) | Date | Type | Description |
|---|---|---|---|---|
| 36-010920, CA-SBR-10920H | Cary D. Cotterman | 2002 | Historic | Early 20th -century refuse deposit with two artifact concentrations and a surrounding sparse artifact scatter. |
| 36-010921, CA-SBR-10921H | Cary D. Cotterman | 2002 | Historic | Early 20th-century refuse deposit with a surrounding sparse artifact scatter. |
| 36-012339, CA-SBR-12217H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 80 artifacts, including ceramic sherds, sherds of a porcelain teacup, glass bottle sherds, and cans of several sizes and shapes. |
| 36-012340, CA-SBR-12218H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 26 artifacts, including a ceramic plate, ceramic sherds, and several sizes and shapes of cans. |
| 36-012341, CA-SBR-12219H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 44 artifacts, including glass bottle sherds, porcelain dish sherds, cans, and a brick. |
| 36-012342, CA-SBR-12220H | S. Norris, T. Diaz, and M. Knypstra | 2005 | Historic | Historical-period refuse deposit consisting of approximately 30 artifacts, including cans, porcelain sherds, and clear glass. |
| 36-012343, CA-SBR-12221H | K. Becker, S. Norris, and T. Diaz | 2005 | Historic | Historical-period refuse deposit that contains about 25 artifacts. |
| 36-012345, CA-SBR-12223H | V. Austerman and L. Lee | 2005 | Historic | Historic period road. |
| 36-012346, CA-SBR-12224H | V. Austerman and L. Lee | 2005 | Historic | Historic period road. |
| 36-020263 | R. Cerreto and R. Cunningham | 2004 | Prehistoric | A small isolated pyroclastic nodule of obsidian with removed flakes. |

### 4.1.1 Previous Cultural Resource Investigations

According to the records at the SCCIC, there have been eight previous cultural resource studies within portions of the 0.5-mile buffer of the project (**Table 4.1-2**). (See **Attachment D**). Two of these studies are located within the project boundary and six of these studies are located outside of the project boundary but in the half-mile buffer zone, **Table 4.1-2**.

The entire project area was surveyed by McKenna in 1991 (SB-02476) for a Phase I Linear Survey for the Hesperia Improvement District (McKenna 1991). This project indicated that the far east margin of the project boundary may be sensitive for cultural resources. In the southwest corner of the project boundary a Cultural Resources Assessment (SB-04036) took place on 1.44 acres for a proposed office building construction (Cerreto 2004). This survey was positive for an isolated flaked pyroclastic nodule of obsidian (36-020263).

**Table 4.1-2**
**KNOWN CULTURAL RESOURCE STUDIES WITHIN A HALF-MILE RADIUS OF THE PROJECT BOUNDARY**

| Report Number | Author(s) | Date | Title | Resources |
|---|---|---|---|---|
| SB-00191 | Smith, Gerald A. | 1973 | Archaeological, Historical And Paleontological Site Survey For County Service Area No. 70 Improvement Zone "J", Assessment of Impact And Recommendations | 36-002208 |
| SB-03448 | Alexandrowicz, John Stephen | 2000 | A Historical Resources Identification Investigation for the Little Sisters Truck Wash, City of Hesperia, San Bernardino County, California | 36-010287, 36-010288 |
| SB-02476 | McKenna, Jeanette | 1991 | A Phase I Linear Survey: Cultural Resources Investigations For The Hesperia Improvement District, Hesperia, San Bernardino County, California | NA |
| SB-02732 | Parr, Robert E. | 1992 | An Archaeological Assessment Of Tentative Parcel Map #14242 Baldy Mesa, San Bernardino County, Ca | 36-004179 |
| SB-04036 | Cerreto, Richard and Christy Malan | 2004 | Cultural Resource Assessment For Parcel 3, APN: 3064-591-17, City Of Hesperia, San Bernardino County, Ca. 18pp | 36-020263 |
| SB-04284 | Alexandrowicz, John Stephen | 2001 | Historic Archaeology At John E. Dufton's Homestead. 134 Pp | 36-010287, 36-010288 |
| SB-04285 | Green, Julia K | 2004 | Cultural Resources Inventory & Evaluation: Timbisha Shoshone Hotel & Casino, San Bernardino County, Ca. 22pp | NA |

| Report Number | Author(s) | Date | Title | Resources |
|---|---|---|---|---|
| SB-05107 | Chandler, Evelyn N, Cary D. Cotterman, and Roger D. Mason | 2002 | 2002 Cultural Resources Survey of The Proposed California Charter Academy Hesperia, San Bernardino County, California | NA |

## 4.2 Native American Outreach

On August 17, 2022, Mr. O'Neil contacted the NAHC via email notifying them of the project, requesting a search of their SLF and asking for a list of local tribal organizations and individuals to contact for project outreach. The results of the search request were received October 7, 2022, at the office of UEI from Ms. Cameron Vela, Cultural Resources Analyst. The NAHC letter stated that "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." (see **Attachment C**).

UEI prepared letters to each of the 20 tribal contacts representing 15 tribal organizations describing the project and included a map showing the project's location, requesting a reply if they have knowledge of cultural resources in the area, and asked if they had any questions or concerns regarding the project (see **Attachment C**). On October 11, 2022, Mr. O'Neil mailed these letters to the 20 tribal contacts, and also emailed identical letters and maps to the 20 tribal contacts for which email addresses were known.

On October 12, 2022, Patricia Garcia-Plotkin, Director for the Agua Caliente Band of Cahuilla Indians indicated through email the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. Jill McCormick, Historic Preservation Officer for the Quechan Tribe of the Fort Yuma Reservation responded though email on October 12, 2022, indicating that the tribe does not wish to comment on this project and defers to more local tribes. Ryan Nordness, Cultural Resources Analyst for the San Manuel Band of Mission Indians indicated through email on October 18, 2022 that the proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the tribe and the Band's cultural resources department is interested to consult whenever this project moves into AB 52/CEQA territory.

Following up on the initial letter and email contacts, telephone calls were conducted on October 25, 2022, to complete the outreach process. These calls were to the 15 tribal contacts who had not already responded to UEI mailing and email. Seven telephone calls were placed with no answer and so messages were left describing the project and requesting a response. These were to Chairperson Sandonne Goad, Chairperson of the Gabrielino/Tongva Nation; Councilmember Charles Alvarez, for the Gabrielino Tongva Tribe; Ann Brierty, Tribal Historic Preservation Officer for the Morongo Band of Mission Indians; Robert Martin, Chairperson for the Morongo Band of Mission Indians; Donna Yocum, Chairperson for the San Fernando Band of Mission Indians; Wayne Walker, Co-Chairperson for the Serrano Nation of Mission Indians; Anthony Madrigal, Historic Preservation Officer for the Twenty-Nine Palms Band of Mission Indians. In a call to Andrew Salas, Chairperson for the Gabrieleno Band of Mission Indians - Kizh Nation, there was no answer, and the mailbox was full so no message could be left. In a call to Sierra Pencille, Chairperson of the Chemehuevi Indian Tribe, the tribal receptionist asked that we leave a message for the Chairperson and a message was left. In a call to Lovina Redner, Tribal Chair of the Santa Rosa Band of Cahuilla Indians, the tribal receptionist

answered and indicated that Tribal Chair Redner was not in the office and transferred our call to the Chair's voicemail where a message was left. In a call to Mark Cochrane, Co-Chairperson of the Serrano Nation of Mission Indians, the phone number was out of service. In a call to Darrell Mike, Chairperson for the Twenty-Nine Palms Band of Mission Indians, the tribal receptionist indicated that the Chairperson was not in so she sent us to his assistant's phone; the assistant did not answer, and a message was left.

During the telephone calls of October 25, 2022, Chairperson Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians indicated that he did not have much information about the project area. But due to the resources present Mr. Morales would like to be informed of any artifacts that are encountered. Christina Conley, Tribal Consultant and Administrator for the Gabrielino Tongva Indians of California Tribal Council indicated that the tribe does not have any comment as it is outside of their tribal area. They defer to sister tribes. (See **Attachment C.**)

## 4.3 Pedestrian Survey Results

On August 31, 2022, an intensive level pedestrian survey of the project site was conducted by Mr. Daniel Ballester, M.A., and Mr. Hunter O'Donnell, B.A., archaeologists with CRM TECH. The survey consisted of walking over, visually inspecting, and photographing the exposed ground surface of the project site in parallel north/south transects spaced 15 meters apart across the project site. In this way the ground surface in the project area was carefully examined for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years or older).

The project consists of a field survey of approximately 19 acres situated between the Oro Grande Wash and the I-15 Freeway. The project site was seen to have been heavily disturbed by grubbing at some point between October 2020 and June 2022 with most of the vegetation and a significant amount of soil being bulldozed into a long berm along the southern portion of the parcel (**Figure 4.3-1**). The project area slopes downward gently towards the bottom of the valley and the Mojave River to the northeast. The vegetation was observed to consist mostly of thistle with a handful of Joshua trees (**Figure 4.3-2**) and a juniper tree, as well as small grasses and brush. Ground visibility was very good (95-100%) with thistle brush being the only obscuring factor.

During the survey, the ground surface within and adjacent to the project area was inspected for any evidence of human activities dating to the prehistoric or historic periods (**Figure 4.3-3** and **Figure 4.3-4**). During survey preparation, a dirt road was noted crossing the project area from north to south which first appears on USGS topographic maps as early as 1902, first appearing on a historical aerial photo in 1938 (NETR Online). During survey this road segment within the project area was found to have been obliterated during the aforementioned grubbing between 2020 and 2022.

An historical refuse scatter was noted in the eastern half of the project parcel. The refuse scatter consisted of cans, a tobacco tin, and fragments of historical glass (**Figure 4.3-5**). There were five metal containers consisting of meat and beverage cans and a tobacco tin (**Figure 4.3-6**). The historical glass consisted of approximately 15 bottle body fragments with a range of colors (opaque white, colorless, aqua, brown, sun-colored amethyst) along with an aqua bottle base fragment containing the text "DR W…" The coordinates, descriptions, and photos of this refuse scatter were recorded and a site record Update has been prepared for the site. This feature has been determined

to be a component of the larger CA-SBR-10288H site, the John E. Dufton homestead (see **Section 4.1.1**). See Continuation Sheet for CRM TECH 3937-1H in **CONFIDENTIAL Attachment E**.

No further historic features or artifacts were observed, and no prehistoric features or artifacts were observed in the project area.

**Figure 4.3-1**
**PROJECT SITE GROUND DISTURBANCE AND BERM**
**VIEW TO THE EAST FROM SOUTHERN BOUNDARY**



**Figure 4.3-2**
**PROJECT AREA OVERVIEW WITH JOSHUA TREES; VIEW TO THE SOUTHEAST**



**Figure 4.3-3**
**PROJECT AREA OVERVIEW; VIEW TO THE NORTHEAST**



**Figure 4.3-4**
**PROJECT AREA OVERVIEW; VIEW TO THE NORTHWEST FROM SOUTHEAST CORNER**



**Figure 4.3-5**
**HISTORIC REFUSE SCATTER OVERVIEW; VIEW TO THE NORTHWEST**



**Figure 4.3-6**
**TOBACCO TIN IN HISTORIC RESFUSE SCATTER**



## 4.4 National Register of Historic Places

A search of the Built Environmental Resource Directory (BERD) provided by the Office of Historic Preservation (2021) was conducted for this project on October 7, 2022. It was determined that the project boundary and project area do not have any resources present that have been evaluated under the National Register (Built Environmental Resource Directory).

# 5.0 MANAGEMENT CONSIDERATIONS

## 5.1 Site Evaluation Criteria

Evaluation of significance under CEQA uses criteria found in eligibility descriptions from the CRHR. Generally, a resource is to be considered historically significant if it meets the criteria for listing in the California Register [Public Resources Code § 5024.1; California Code of Regulations § 15064.5(a)(3)]. These criteria provide that a resource may be listed as potentially significant if it:

- Is associated with the events that have made a significant contribution to the broad patterns of California history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- Has yielded, or may be likely to yield, information important in prehistory or history.

## 5.2 Potential Effects

No CRHR- or NRHP-identified prehistoric or historic cultural resources are present on the project site and so will not be adversely affected by the project. However, the presence of buried cultural (prehistoric and/or historic archaeological) resources cannot be ruled out. If prehistoric and/or historic artifacts are observed during subsurface excavation, work should be stopped in that area and a qualified archaeologist and Native American monitor should be on call to assess the finds.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Two archaeological resources – one prehistoric and one historic – were identified in the CHRIS record literature search in the project site. These consist of a single worked nodule of obsidian (36-020263) located in the north-central portion of the project parcel, and the John E. Dufton homestead (CA-SBR-10288H) which encompasses the project site and a large area to the north, though no features were recorded within the current project site itself There are seven historic period refuse deposits and three historic period dirt roads located within the half mile radius of the project area, several have which have since been lost due to grading and plowing. USGS topographic historical maps and aerial photos indicate that the project site has always been open land. The pedestrian survey located and recorded a light scatter of historic refuse in the eastern portion of the project parcel, which has been recorded as a component of CA-SBR-10288H.

Two Native American tribal responses have been received to date. The San Manuel Band of Mission Indians stated that the proposed project is located near known prehistoric sites and the area is of concern to the tribe. They also requested to participate in AB 52 consultation. The Gabrieleno/Tongva San Gabriel Band of Mission Indians did not have information on the project area, but asked that they be informed of any artifacts encountered during the project. (See **Section 4.2** and **Attachment C.**)

This cultural resources study's findings based on the records search and pedestrian survey suggest that there is a medium potential for the presence of prehistoric cultural resources. If prehistoric and/or historic items are observed during subsurface activities, work should be stopped in that area and a qualified archaeologist and Native American monitor should be called to assess the findings and retrieve the material.

The light refuse scatter observed in the eastern area of the project site does not warrant preservation. However, as a component of the larger Dufton homestead site there is the potential for further subsurface artifacts and features of this site to be present. A monitor should be present during grading and trenching in these areas to recover material from these potential deposits to better understand the nature of the use of this homestead possibly dating back to the 1890s.

While the project site as a whole appears to be only disturbed in the upper levels of soil with some grading to build the berms and some discing, it is not recommended that an archaeological monitor be present during ground-disturbing activities throughout the project site (except as noted above). However, if prehistoric and/or historic items are observed during subsurface activities, work should be stopped in that area and a qualified archaeologist and Native American monitor be retained to assess the finding(s) and retrieve the material.

If human remains are encountered during excavations associated with this project, work will halt in that area and the San Bernardino County Coroner will be notified (§ 5097.98 of the Public Resources Code). The Coroner will determine whether the remains are of recent human origin or older Native American ancestry. If the coroner, with the aid of the supervising archaeologist, determines that the remains are prehistoric, they will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will make recommendations as to the manner for handling these remains and further provide for the disposition of the remains, as required by § 7050.5 of the California Health and Safety Code. Following notification by the NAHC, the MLD will make these recommendations within 48 hours of having access to the project site following notification by the NAHC. These recommendations may include scientific removal and nondestructive analysis of

human remains and items associated with Native American burials (§ 7050.5 of the Health and Safety Code).

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# ATTACHMENTS

# ATTACHMENT A

# PROJECT MAPS

**Figure 1**
**PROJECT REGIONAL LOCATION MAP**

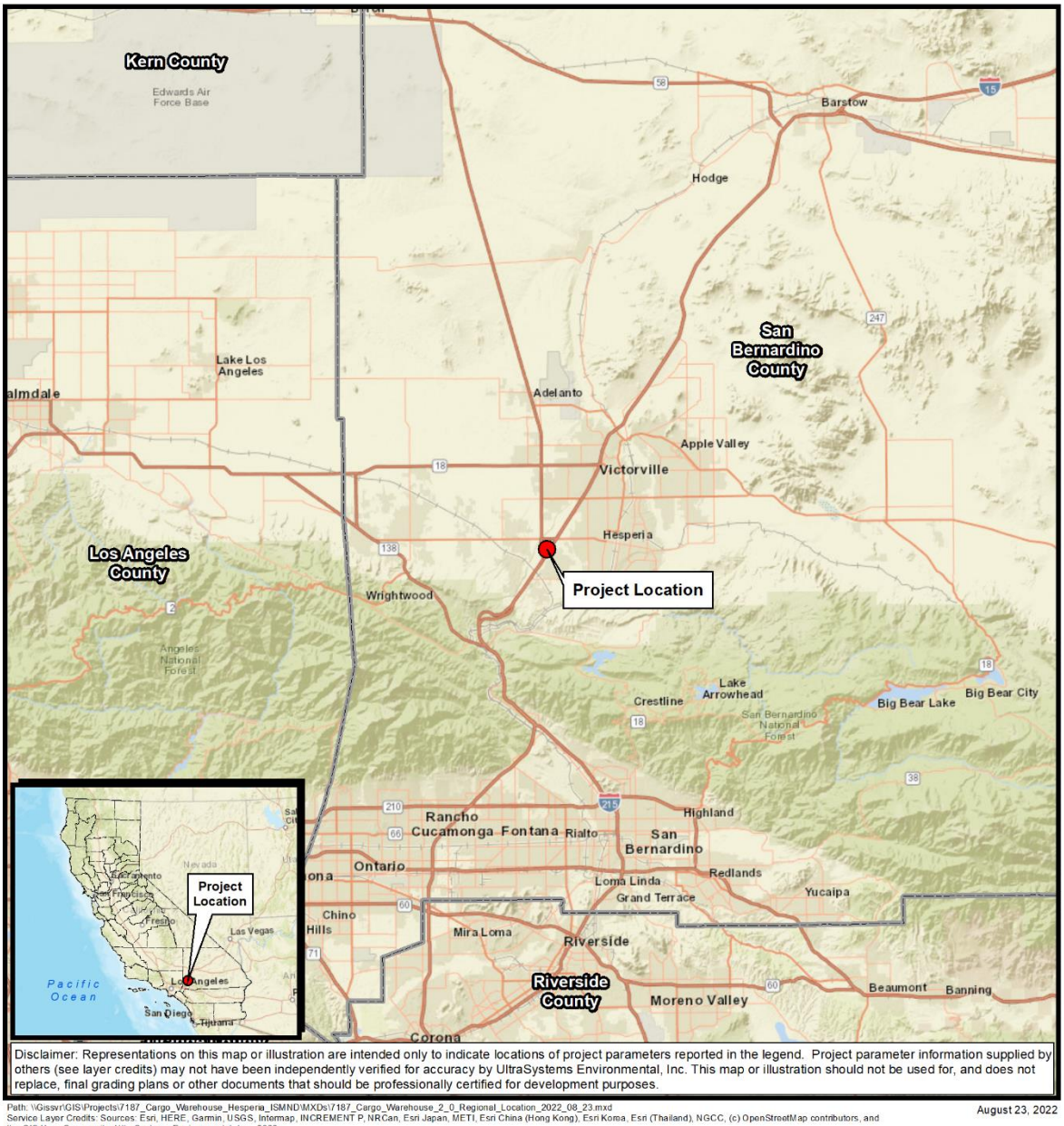
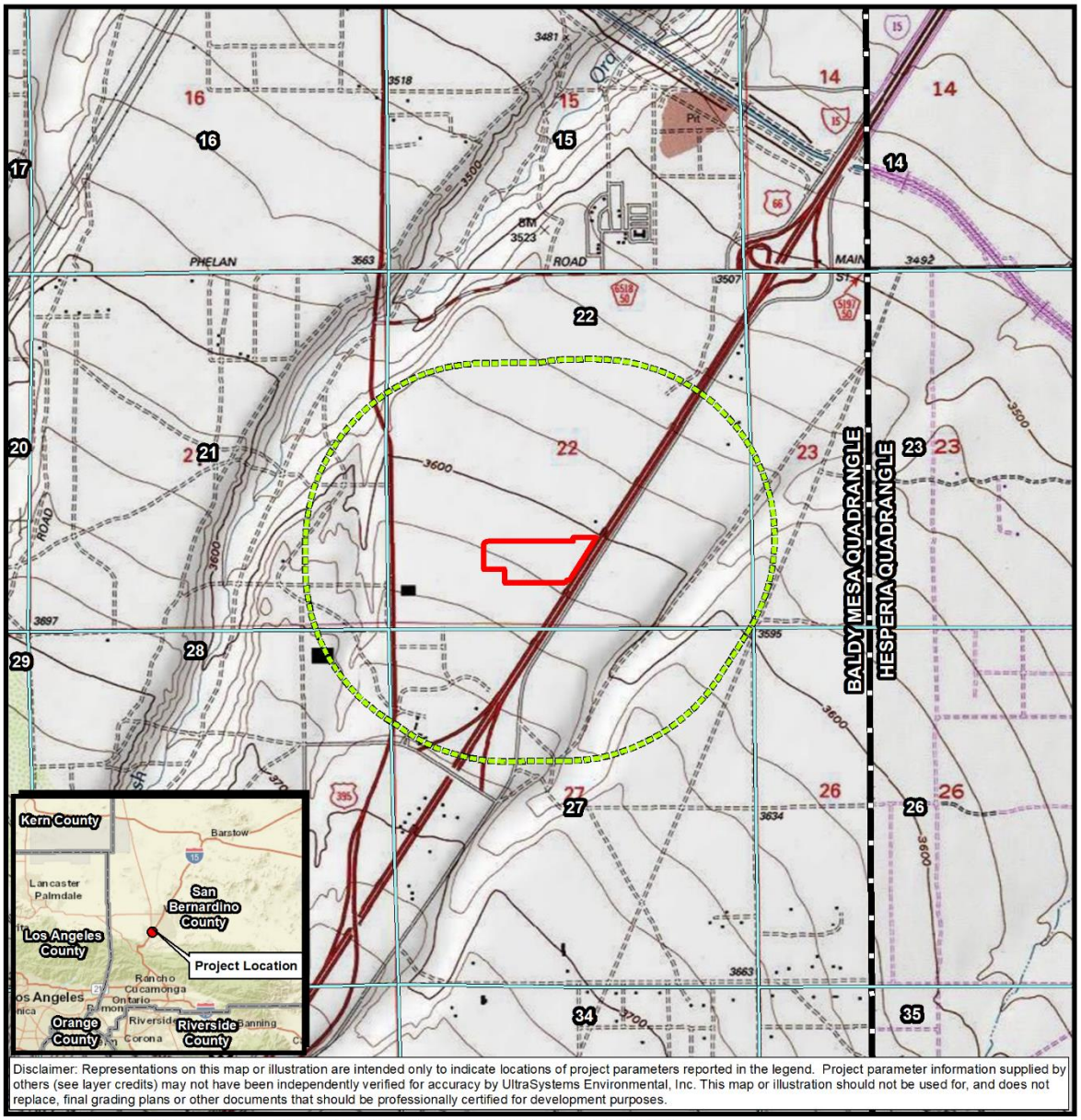


**Figure 2**
**PROJECT STUDY AREA**



**Figure 3**
**TOPOGRAPHIC MAP WITH APE SHOWN AND HALF-MILE BUFFER ZONE**




Path: \\Gissvr\GIS\Projects\7187_Cargo_Warehouse_Hesperia_ISMND\MXDs\7187_Cargo_Warehouse_4_5_Topo_2022_08_16.mxd
August 16, 2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed; CA Dept. of Conservation, May 2019; UltraSystems Environmental, Inc., 2022

Scale: 1:24,000

N

0 1,000 2,000 Feet

0 250 500 Meters

**Legend**

- Project Location
- Half-Mile Radius
- Quadrangle Boundary
- Section Boundary

**Cargo Solutions Truck Warehouse**

Topographic Map
USGS Quadrangle: Baldymesa
Township: 4N Range: 5W
Section: 22

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# ATTACHMENT B

# PERSONNEL BACKGROUND

## Stephen O'Neil, M.A., RPA

*Cultural Resources Manager, Cultural Anthropology/Archaeology*

### Education

- M.A., Anthropology (Ethnography emphasis), California State University, Fullerton, CA, 2002
- B.A., Anthropology, California State University, Long Beach, CA, 1979

### Professional and Institutional Affiliations

- California Mission Studies Association
- City of Laguna Beach Environmental Sustainability Committee, appointed 2012
- Orange County Natural History Museum; Board Member
- Pacific Coast Archaeological Society; Board Member and Past President
- Society for California Archaeology

### Professional Registrations and Licenses

- Register of Professional Archaeologists (No. 16104) (current)
- Riverside County, CA, Cultural Resource Consultant (No. 259) (current)
- Cultural Resource Field Director, BLM Permit (CA-13-19) – California, 2013
- NEPA and CEQ Consultation for Environmental Professionals; course by the National Association of Environmental Professionals, 2013

### Professional Experience

Mr. O'Neil has 30 years of experience as a cultural anthropologist in California. He has researched and written on archaeology, ethnography, and history. Mr. O'Neil has archaeological experience in excavation, survey, monitoring, and lab work. Most of this has been on Native American prehistoric sites, but also includes Spanish, Mexican, and American period adobe sites. His supervisory experience includes excavation and survey crew chief and project director of an adobe house excavation. He has a wide range of expertise in Phase I & II Environmental Site Assessments, archaeological resource assessment surveys, salvage operations, and cultural background studies for various EIR projects. Mr. O'Neil has worked for cultural resource management firms as well as government agencies and Native American entities. He has prepared technical reports as well as published journal articles.

### Select project experience

### *Inglewood Avenue Corridor Widening Project, City of Lawndale, Los Angeles County, CA: 2013-2014*

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. The City of Lawndale is widening Inglewood Avenue from Marine Avenue north. The project uses Caltrans funds and the cultural resources report was prepared in Caltrans format. A separate historic properties report was prepared as well. Prepared for Huitt-Zollars Engineering.

### *Via Ballena Storm Drain Relocation, City of San Clemente, Orange County, CA: 2013*

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This residential area has a damaged storm drain under Via Ballena that was causing earth movement and erosion. The requirements for state funding, and cultural resources inventory report was required. Prepared for the City of San Clemente.

### *Pine Canyon Road – Three Points Road to Lake Hughes Road, Los Angeles County, CA: 2013*

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This nine-mile portion of Pine Canyon Road lies partially within the Angeles National Forest. A series of widening and culvert repairs is planned by the Los Angeles County Department of Public Works (LACDPW). An assessment was made of possible cultural resources, historic and prehistoric that may be affected by the construction, and four historic sites were recorded. Prepared for LACDPW.

### *Alton Parkway Extension Project, Cities of Irvine and Lake Forest, Orange County, CA: 2012*

Mr. O'Neil directed and conducted archaeological and paleontological monitoring, archaeological excavation, cultural resource records search, Native American contacts and report writing for this project. Alton Parkway was extended 2.1 miles between the cities of Irvine and Lake Forest. For the portion within the City of Irvine, UltraSystems conducted monitoring and excavation services. One prehistoric site was excavated and reported on; a series of living features were discovered and also reported. The final monitoring report described the paleontological and archaeological findings. A separate technical report on the archaeological excavations was also prepared. Mr. O'Neil directed research into historic and prehistoric background and prepared the final assessment of potential impacts. Prepared for the Orange County Department of Public Works.

### *NEPA and CEQA Documentation, Los Angeles Regional Interoperable Communications System (LA-RICS), Los Angeles County, CA: 2011-2014*

Mr. O'Neil is part of the UltraSystems team currently preparing technical studies and NEPA and CEQA documentation toward the construction of LA-RICS, an $800-million emergency communications system due to be operational in 2016. LA-RICS will provide a highly-coordinated emergency communications system to all first responders to natural and man-made disasters throughout Los Angeles County. Mr. O'Neil is the cultural and historical resources studies team leader, directing five researchers. These studies include coordination of field visits to all 260-plus locations for an archaeologist and/or an architectural historian with agency escorts to observe and record any onsite prehistoric and historic features, performing records and literature searches at archaeology information centers and local archives, contacting local agencies for historically listed structures and

districts, coordinate public notices of the project throughout Los Angeles County, consultation with the NAHC and all local tribal organizations, and direct consultation with the California State Historic Preservation Officer (SHPO). This information was compiled by Mr. O'Neil and is used to prepare FCC historical resource forms which were submitted to the SHPO for review.

## Megan B. Doukakis, M.A.

*Assistant Project Archaeologist*

### Education

- M.A. Public Archaeology, California State University, Northridge, 2012–2018
- B.A., Anthropology, California State University, Long Beach, 2011
- University of California, Los Angeles - Pimu Catalina Archaeological Field School, 2010
- International Scholar Laureate Program: Delegation on Anthropology and Archaeology in China, 2009
- Earthwatch Institute, "Unearthing Mallorca's Past" archaeological excavation, Mallorca, Spain, 2005

### Professional and Institutional Affiliations

- Phi Kappa Phi National Honor Society, 2011
- Sigma Alpha Lambda, National Leadership and Honor Organization, 2010
- Society for California Archaeology Membership 2012–2015

### Professional Experience

Mrs. Doukakis has worked in the field of cultural resource management for seven years at environmental firms. Before this Mrs. Doukakis had participated in multiple field schools in Southern California and abroad. She has experience in survey, excavation, laboratory work, and information searches. Mrs. Doukakis holds the title of Archaeological Technician at UltraSystems Environmental. Prior to this, she completed a CRM internship at UltraSystems. These positions have provided her with the opportunity to contribute to proposals, final reports, project scheduling, archaeological record searches and paleontological, archaeological and Native American monitor organizing for projects.

### Select project experience

***Results of the Condition Assessment, Site Monitoring, and Effects Treatment Plan (CASMET) Marine Corps Base Camp Pendleton, San Diego County, CA***

***Client: Marine Corps Base Camp Pendleton, Duration: 5/11 to 9/11***

Mrs. Doukakis conducted survey and excavation for the USMC Base Camp Pendleton condition assessment project. Areas were tested around Camp Pendleton for the presence and condition of cultural material previously recorded. She also conducted laboratory work and curation for the material collected within excavations. Mrs. Doukakis contributed to the final report with background records searches and prehistoric and historic background writing for the report.

***Archaeological Excavation Results Report for the Alton Parkway Extension Project, Orange County, CA***

***Client: Orange County Department of Public Works; Contract: $357,170, 10/10 to 6/12***

Mrs. Doukakis participated in the Alton Parkway project, City of Irvine, Orange County, CA. She was responsible for cleaning and cataloging the artifacts recovered from the excavation and surface

collections. She also contributed to the final report by compiling the historical background information.

### *Identification and Evaluation of Historic Properties ADA Wheelchair Access Ramp Improvement Project, City of Lake Forest, Orange County, CA*

***Client: City of Lake Forest/Penco, Contract: $2,981.62, Duration: 6/12 to 7/12***

Mrs. Doukakis contributed to the cultural resource records search, field survey, Native American contacts and report writing for this project. This residential area required wheelchair access ramps on every corner in this neighborhood. An assessment of the possible cultural resources that may be affected with this construction was made for the City of Lake Forest. Mrs. Doukakis contributed the historic and prehistoric background, and the assessment of the possible resources in the area.

### *Tenaska Solar Projects Imperial Solar Energy Center–South; Imperial Solar Energy Center–West; and Wistaria Ranch, Imperial County, CA*

***Client: Tenaska/CSOLAR Development, Contract: $3,441,809, 10/13 to 8/15.***

Mrs. Doukakis conducted Native American contacts for field monitoring, coordinated with subcontractors to initiate cultural and paleontological field surveys, for the several solar energy projects being handled by UltraSystems Environmental in the El Centro area, Imperial County, CA. She contributed different parts of the survey report and monitoring program documents, including historic and prehistoric background, editorial review. At ISEC- West, Mrs. Doukakis was responsible for contacting and organizing Tribal monitors for this project. She contacted tribal organizations and inquired about their interest in providing tribal monitors for this project. directly organized with Native American groups to sign agreements, and fill out tax paperwork. She was also responsible for organizing and keeping track of and gathering field log from monitors from six tribal groups. She also recovered previously recorded artifacts in the field before the start of the project.

### *NEPA and CEQA Documentation, Los Angeles Regional Interoperable Communications System -Long Term Evolution, Los Angeles County, CA*

***Client: LARICS Joint Powers Authority, Contract: $3,051,312, 1/12 to 1/15.***

UltraSystems' team prepared technical studies and NEPA and CEQA documentation toward the construction of LA-RICS-LTE, an $800-million emergency communications system that will provide a highly coordinated emergency communications system to all first-responders to natural and man-made disasters throughout Los Angeles County. For this project Mrs. Doukakis conducted record searches at the South Central Coastal Information Center for the Department of Commerce on over 300 project sites throughout the County of Los Angeles. She helped prepare letters to the NAHC and tribal organizations associated with the project area. Mrs. Doukakis contributed to contacting, organizing, and scheduling architectural historians to conduct historical research around the project areas. Letters were written for contact to local agencies and cities. A public notice was constructed and published in three local newspapers. Mrs. Doukakis also constructed hundreds of Federal Communications Commission 620 and 621 forms for submission to California State Historic Preservation Office.

### *Newton Canyon Monitoring Project, CA*

***Client: County of Los Angeles Department of Public Works, Contract: $2,930.00, Duration: 7/13 to 12/13***

Mrs. Doukakis was an archaeological monitor for this project. She monitored all ground disturbing activities as well as lightly surveying the area for cultural material. Mrs. Doukakis also conducted the records center research at the South Central Coastal Information Center at CSUF. Through email, letter, and telephone correspondence, Mrs. Doukakis contacted the NAHC and associated tribal groups.

# Brent Johnson

*Historian*

UltraSystems
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**Years of Experience**
22

**Years with Firm**
1

**Education**

- M.A. History of Science: California State University, Fullerton, 1998
- B.A. History of Science, University of California, San Diego, 1991

**Professional Registrations**

- Advisory Council on Historic Preservation, Section 106 Essentials, Certificate
- Asbestos Building Inspector, Initial Course DOSH CA-015-05, Certificate 8BII0518150008N6786
- Lead Inspector / Risk Assessor, Lead-Related Construction Certificate ID# 31233
- CPR, First Aid & AED Certification, Issued 11/12/2015 with Renewal on 11/2017
- RF Safety 101 Certification, Issued 12/17/2015
- Remote Pilot Certification, 3980697, Issued March 2017
- NAUI Certified Scuba Diver, 1992

## PROFESSIONAL SUMMARY

Mr. Johnson has significant experience in due diligence assessments for a variety of property types and the needs and requirements of a varied number of reporting standards, including ASTM standards, EPA's All Appropriate Inquiry (AAI), and customized client formats. Specifically, Mr. Johnson has performed Architectural Historian Evaluations, Phase I Environmental Site Assessments, Environmental Transaction Screens, Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS) preliminary environmental assessments, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) Phase I and Phase II assessments, Floodplain Evaluation reports, and Lead and Asbestos Inspections and Sampling.

## SELECT PROJECT EXPERIENCE

### *Architectural Historian Evaluation (DPR 523 Form), Mar Vista Apartments, Port Hueneme CA (2021)*

The International Style, Mar Vista Apartments was evaluated to determine whether it is eligible for the National Register of Historic Places. The building was designed by master architects Roy C. Wilson, John F. Stroh, and George Wilson, AIA. So successful was their architectural practice that by the 1920s few of the buildings constructed on Main Street in Santa Paula were designed by anyone other than Roy Wilson. Prominent architect Roy E. Colbert and apprentice of Wilson and Stroh was interviewed for this project, providing insights into the practical considerations of designing residential, commercial, and industrial architectural for a new community.

### *CEQA – Laguna Beach Cliff Drive Access, Laguna Beach CA (2018)*

This cultural resources records search and site visit evaluated the potential impact of improvements to the public right-of-way to include the removal of wood and concrete stairs and a retaining wall, and new construction of a drainage system, slope stabilization, and pedestrian lighting. The assessment determined that the project would not impair the historic viewshed; however, its proximity to the Heisler Park prehistoric encampment, prompted a recommendation for archaeology site monitoring during the demolition phase.

### *Defense Environmental Restoration Program for Formerly Used Defense Sites (2003- 2004)*

Mr. Johnson conducted field investigations and historical research for the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS) to determine the potential for release of hazardous, toxic radioactive waste, munitions constituents, and unexploded ordnance resulting from previous military activities. Extensive archival research and oral historical interviews with veterans were used to identify areas of potential hazard. Mr. Johnson also assisted in authoring a number of preliminary assessments for the USACE Los Angeles District including: Van Nuys Army Airfield, CA; Ontario Army Air Field, CA; U.S. Air Force Plant 16 (NASA), CA; U.S. Air Force Plant 14 (NASA), CA; Marquardt Ramjet Development Facility, CA; Pomona Quartermaster Depot, CA; Naval Supply Depot (NSD) Clearfield, UT; Mira Loma Quartermaster Depot, CA; Corona Annex Naval Surface Warfare Center, CA; Davis-Monthan Air Force Base, AZ; and the former Los Angeles Nike Missile Sites located at: Magic Mountain/Lang/Saugus, LA-98, Pointe Vicente (Palos

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Irvine, CA 92618-4355

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Facsimile: 949.788.4901
Website: www.ultrasystems.com

Verdes), LA-55, Barley Flats – Mt. Disappointment, LA-09, Van Nuys – Sepulveda, LA-96, Los Pinetos/Newhall, LA-94. Most recently, Mr. Johnson authored the historic context statement for the Fort Irwin National Training Center in San Bernardino, CA.

***FCC NEPA Wireless Telecommunications Sites (2005 – 2016)***

Mr. Johnson has provided NEPA compliance consulting for the Bechtel Cingular Program, Sprint-Nextel, Verizon Wireless, American Tower Corporation, Global Tower LLC, Cricket Wireless, T-Mobile USA, Horizon Tower LLC, Clearwire, AT&T Mobility, and MetroPCS environmental contracts, which included over 1,000 sites between 2005 and 2016.

***Phase II Cultural Resources Historic Building Inventory, Penmar, Venice CA (2011)***

The purpose of the cultural resource survey report for the Penmar Water Quality Improvement and Runoff Reuse Project was to provide an historic architectural assessment for several historic period structures in the city of Venice. The project included an architectural history of Venice; intensive-level evaluation of five historic buildings and determination of eligibility for the California Register of Historical Resources; and an oral presentation of the project methodology and conclusions to the Los Angeles Department of Public Works, Bureau of Engineering.

***Built Environment Survey for Silverleaf Solar Project, El Centro CA (2011)***

The goal of this investigation was to determine whether built environment resources exist within project areas associated with the proposed Silverleaf Solar Project and the associated transmission line, and if so, to determine their eligibility for inclusion on the National Register of Historic Places. The collections of both the South Coast Information Center and the Pioneers Park Museum archives were reviewed, and interviews with the Imperial County Historical Society and resident of 85 years, Mr. Jack Strobel were conducted to establish the historic context of the site and surrounding vicinity. An architectural history of El Centro was written as part of the introductory material for the report, and during the site walk seven buildings were identified with the area of potential effect. Each building was evaluated using the DPR Primary Record Form and were determined ineligible for the National Register of Historic Places.

***Alon Bakersfield Refinery Crude Flexibility Project, Bakersfield CA (2013)***

Proposed improvements to the 427-acre Alon Bakersfield Oil Refinery, which included the expansion of railroad, transfer and storage facilities, and process units, presented a potential impact to a historic refinery that may have significance to the early development of the petroleum industry in California. A direct assessment of four historic-period (circa 1940) buildings including the original laboratory, fire house, maintenance and planning building, and warehouse was conducted using the DPR523 form set. It was determined that the buildings were ineligible for the NR, CR, or Local designation and a status code of 6Z was assigned to each building.

***USC Historic Campus - Crown Castle DAS Communications Project, Los Angeles CA (2013)***

The Crown Castle development of eight externally-mounted DAS wireless antennas within the historic core of the USC campus required an evaluation of potential impacts to the USC Historic District. Direct assessments using the DPR Primary Record and Building, Structure, and Object Record forms were performed for the Social Science Building, designed by Edward Durell Stone; Booth Ferris Rehearsal Hall, designed by William L. Pereira; Neely Petroleum & Chemical Engineering Building, designed by Smith, Powell & Morgridge; Edward L. Doheny Jr. Memorial Library, designed by Samuel E. Lunden; Robert Glenn Rapp Engineering Building, designed by Smith, Powell & Morgridge; Physical Education Building, designed by Parkinson & Parkinson; and the Norris Dental Science Center.

***Alamitos Park Project-HSIPL-5108, Long Beach CA (2013)***

This Historical Resources Evaluation Report (HRER) and Historic District Evaluation of the Saint Anthony's Parish involved the assessment of approximately 50 residential and commercial buildings, in addition to the Saint Anthony's Catholic Parish. The purpose of the report was to determine potential impacts and suggest possible mitigation associated with the development of the proposed Alamitos Park Project. The project involved a records search at the South Central Coastal California Information Center (SCCIC); review of Long Beach City building permits and city directories; a summary of Long Beach historic architecture; and direct assessment of every building older than 45 years within the proposed area of impact along Martin Luther King Jr. Avenue, 6th Street, and 7th Street.

# ATTACHMENT C

# NATIVE AMERICAN HERITAGE COMMISSION RECORDS SEARCH

UltraSystems
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August 17, 2022

Government Program Analyst
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, California 95691

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Dear NAHC Staff,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems will conduct a cultural resources study to evaluate the potential presence of prehistoric and historic resources within the project boundary. I am requesting a Native American Contact List of interested tribes, organizations and individuals in the general Project area, and a search of the Sacred Lands File for potential traditional cultural sites in the project area.

The proposed project includes the development of three buildings that include warehouse, office and grade-level door for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldymesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south.

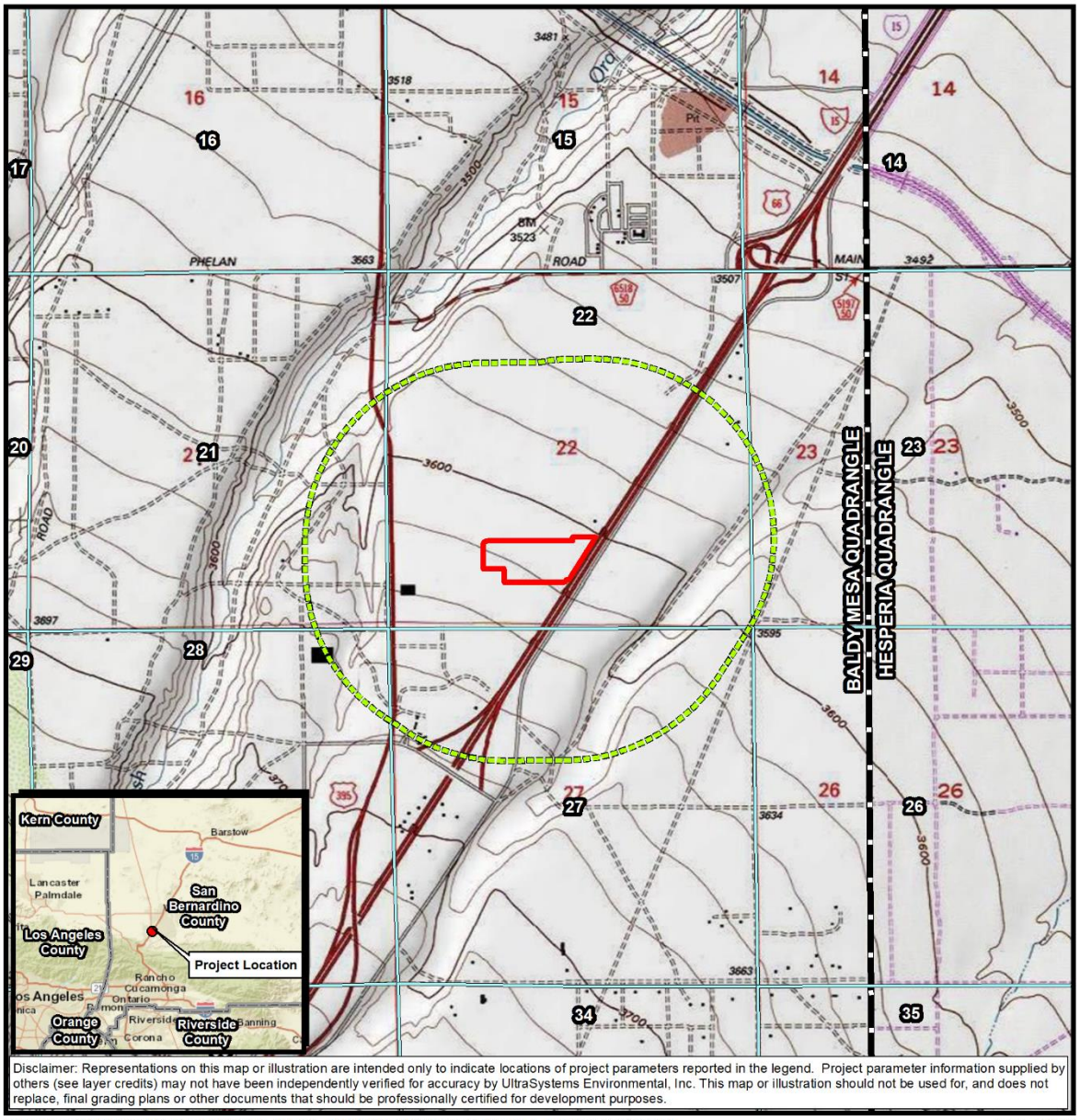
If you require additional information or have any questions, please contact me.

Thank you for your help.

Sincerely,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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BALDY MESA QUADRANGLE
HESPERIA QUADRANGLE
PHELAN
ROAD
MAIN ST
Kern County
Barstow
Lancaster
Palmdale
San Bernardino County
Los Angeles County
Project Location
Rancho Cucamonga
Ontario
Riverside
Corona
Banning
Orange County
Riverside County
Disclaimer: Representations on this map or illustration are intended only to indicate locations of project parameters reported in the legend. Project parameter information supplied by others (see layer credits) may not have been independently verified for accuracy by UltraSystems Environmental, Inc. This map or illustration should not be used for, and does not replace, final grading plans or other documents that should be professionally certified for development purposes.
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Cargo Solutions
Truck Warehouse
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Township: 4N Range: 5W
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STATE OF CALIFORNIA Gavin Newsom, *Governor*

# NATIVE AMERICAN HERITAGE COMMISSION

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October 7, 2022

Stephen O'Neil
UltraSystems Environmental

Via Email to: soneil@ultrasystems.com

**Re: Cargo Solutions Truck Warehouse Hesperia UltraSystems Environmental Project No. 7187, San Bernardino County**

Dear Mr. O'Neil:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
*Cultural Resources Analyst*

Attachment

Page 1 of 1

**Native American Heritage Commission**
**Native American Contact List**
**San Bernardino County**
**10/7/2022**

***Agua Caliente Band of Cahuilla Indians***
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

***Agua Caliente Band of Cahuilla Indians***
Reid Milanovich, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
laviles@aguacaliente.net

***Chemehuevi Indian Tribe***
Sierra Pencille, Chairperson
P.O. Box 1976 1990 Palo Verde Drive — Chemehuevi
Havasu Lake, CA, 92363
Phone: (760) 858 - 4219
Fax: (760) 858-5400
chairman@cit-nsn.gov

***Gabrieleno Band of Mission Indians - Kizh Nation***
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

***Gabrieleno/Tongva San Gabriel Band of Mission Indians***
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

***Gabrielino /Tongva Nation***
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

***Gabrielino Tongva Indians of California Tribal Council***
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078 — Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

***Gabrielino Tongva Indians of California Tribal Council***
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

***Gabrielino-Tongva Tribe***
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

***Morongo Band of Mission Indians***
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

***Morongo Band of Mission Indians***
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UltraSystems Environmental Project No. 7187, San Bernardino County.

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**Native American Heritage Commission**
**Native American Contact List**
**San Bernardino County**
**10/7/2022**

***Quechan Tribe of the Fort Yuma Reservation***
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

***Quechan Tribe of the Fort Yuma Reservation***
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

***San Fernando Band of Mission Indians***
Donna Yocum, Chairperson
P.O. Box 221838 — Kitanemuk
Newhall, CA, 91322 — Vanyume
Phone: (503) 539 - 0933 — Tataviam
Fax: (503) 574-3308
ddyocum@comcast.net

***San Manuel Band of Mission Indians***
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Jessica.Mauck@sanmanuel-nsn.gov

***Santa Rosa Band of Cahuilla Indians***
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

***Serrano Nation of Mission Indians***
Mark Cochrane, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (909) 528 - 9032
serranonation1@gmail.com

***Serrano Nation of Mission Indians***
Wayne Walker, Co-Chairperson
P. O. Box 343 — Serrano
Patton, CA, 92369
Phone: (253) 370 - 0167
serranonation1@gmail.com

***Twenty-Nine Palms Band of Mission Indians***
Darrell Mike, Chairperson
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

***Twenty-Nine Palms Band of Mission Indians***
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UltraSystems Environmental Project No. 7187, San Bernardino County.

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October 11, 2022

Charles Alvarez
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA, 91307

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Mr. Alvarez,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrielino-Tongva Tribe. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
Telephone: 949.788.4900, ext. 276
Facsimile: 949.788.4901
Website: www.ultrasystems.com

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October 11, 2022

Ann Brierty, THPO
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA, 92220

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Brierty,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Morongo Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Mark Cochrane, Co-Chairperson
Serrano Nation of Mission Indians
P. O. Box 343
Patton, CA, 92369

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Co-Chairperson Cochrane,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Serrano Nation of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Christina Conley, Tribal Consultant and Administrator
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 941078
Simi Valley, CA, 93094

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Conley,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrielino Tongva Indians of California Tribal Council. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA, 90707

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Dorame,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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Thank you for your help.

Respectfully yours,

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Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA, 92264

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Garcia-Plotkin,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Sandonne Goad, Chairperson
Gabrielino /Tongva Nation
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Goad,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Anthony Madrigal, Tribal Historic Preservation Officer
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA, 92236

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Mr. Madrigal,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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Thank you for your help.

Respectfully yours,

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soneil@ultrasystems.com

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October 11, 2022

Robert Martin, Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA, 92220

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Martin,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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Thank you for your help.

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October 11, 2022

Jessica Mauck, Director of Cultural Resources
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA, 92346

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. Mauck,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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October 11, 2022

Darrell Mike, Chairperson
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA, 92236

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Mike,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Twenty-Nine Palms Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
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October 11, 2022

Jill McCormick, Historic Preservation Officer
Quechan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ, 85366

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Ms. McCormick,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Quechan Tribe of the Fort Yuma Reservation. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Reid Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA, 92264

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Milanovich,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Agua Caliente Band of Cahuilla Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Morales,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Gabrieleno/Tongva San Gabriel Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Sierra Pencille, Chairperson
Chemehuevi Indian Tribe
P.O. Box 1976
1990 Palo Verde Drive
Havasu Lake, CA, 92363

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Pencille,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the Chemehuevi Indian Tribe. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,



Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA, 92539

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Tribal Chair Redner,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Salas,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
Quechan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ, 85366

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Acting Chairman Scott,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Wayne Walker, Co-Chairperson
Serrano Nation of Mission Indians
P. O. Box 343
Patton, CA, 92369

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Co-Chairperson Walker,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

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The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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October 11, 2022

Donna Yocum, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA, 91322

**Subject: Cultural Resources Inventory, Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County, California. UltraSystems Environmental Project No. 7187.**

Chairperson Yocum,

UltraSystems Environmental, Inc. (UEI) has been contracted by Cargo Solution Express, Inc. to conduct a Cultural Resources Inventory in support of the Cargo Solutions Truck Warehouse Hesperia Project. The Project consists of the development of a proposed repair shop and truck warehouse facility, in the city of Hesperia, San Bernardino County, California. UltraSystems is conducting a cultural resources assessment and records search to evaluate the potential presence of prehistoric and historic resources within the project boundary.

The proposed project includes the development of three buildings that include warehouses, office, truck wash and grade-level doors for a total of 133,995 sq. ft. This project also includes 221 parking spaces. The project area covers approximately 19 acres.

As part of the cultural resources study for the Project, I am writing to request your input on potential Native American resources in or near the Area of Potential Effect (APE). In a letter dated October 7, 2022, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative [emphasis in the original]." The Commission recommended that local Native American individuals and organizations be contacted for further information, including the San Fernando Band of Mission Indians. Information on cultural resources in the project study area that the tribe is willing to share with us for the study would be appreciated.

The Project is located in western Hesperia, and is specifically located at the southeast corner of the intersection of Three Flags Avenue and Poplar Street, in the city of Hesperia. This may be seen on the *Baldy Mesa, Calif.*, USGS topographical quadrangle, Range 05 West, Township 04 North, in the N ½ of the SE ¼ of the SW ¼; the NW ¼ of the SW ¼ of the SE ¼; and the SW ¼ of the NW ¼ of the SE 1/4 of Section 22. The subject property is surrounded to the north with vacant land, to the east by the I-15 freeway, and commercial businesses to the west and south. This is shown on the attached map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manager
soneil@ultrasystems.com

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## Cargo Solutions Warehouse Project, City of Hesperia, San Bernardino County, California. [UEI #7187]

### Native American Contact Log

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| Cameron Vela, Cultural Resource Analyst | Native American Heritage Commission | | August 17, 2022 | N/A | Request for Sacred Lands File search and local Native American representatives contact information. Responded October 7, 2022. |
| Reid Milanovich, Chairperson | Agua Caliente Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received the same day thanking us for our email. An email response was received from Archaeological Technician Nicole A. Raslich on October 12, 2022, indicating that the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. |
| Patricia Garcia-Plotkin, Director | Agua Caliente Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received from Archaeological Technician Nicole A. Raslich on October 12, 2022, indicating that the project is not located within the Tribe's Traditional Use Area and that they are deferring any comments to closer tribes. |
| Sierra Pencille, Chairperson | Chemehuevi Indian Tribe | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist asked that we leave a message for the Chairperson. A message was left. There has been no response to date. |
| Andrew Salas, Chairperson | Gabrieleno Band of Mission Indians - Kizh Nation | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and the mailbox was full so no message was left. |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| Anthony Morales, Chairperson | Gabrieleno/ Tongva San Gabriel Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. The Chairperson called back the same day and indicated that he did not have much information about the project area. But due to the resources present he would like to be informed of any artifacts that are encountered. |
| Sandonne Goad, Chairperson | Gabrielino /Tongva Nation | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Robert Dorame, Chairperson | Gabrielino Tongva Indians of California Tribal Council | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. Ms. Conley replied for the Tribe – see below. |
| Christina Conley, Tribal Consultant & Administra-tor- | Gabrielino Tongva Indians of California Tribal Council | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. Ms. Conley indicated that the tribe does not have any comment as it is outside of their tribal area. They defer to sister tribes. . |
| Charles Alvarez, Councilmem ber | Gabrielino - Tongva Tribe | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A delivery status failure was received for this email on the same day. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Ann Brierty, THPO | Morongo Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| | | | | | answer, and a message was left. There has been no response to date. |
| Robert Martin, Chairperson | Morongo Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Jill McCormick, Historic Preservation Officer | Quechan Tribe of the Fort Yuma Reservation | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email was received from Ms. McCormick on October 12, 2022, indicating that they do not wish to comment on this project and defer to more local tribes. |
| Manfred Scott, Acting Chairman | Quechan Tribe of the Fort Yuma Reservation | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email was received from Ms. McCormick on October 12, 2022, indicating that they do not wish to comment on this project and defer to more local tribes. |
| Donna Yocum, Chairperson | San Fernando Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Jessica Mauck, Director of Cultural Resources | San Manuel Band of Mission Indians | October 11, 2022 | October 11, 2022 | N/A | Letter and email describing project and requesting input on concerns was sent October 11, 2022. An email response was received on October 18, 2022 from Ryan Nordness, Cultural Resources Analyst indicating that the proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the YSMN and the department is interested to consult |

| Name | Tribe/ Affiliation | Letter Contacts | E-mail Contacts | Telephone Contact | Comments |
|---|---|---|---|---|---|
| | | | | | whenever this project moves into AB52/CEQA territory. |
| Lovina Redner, Tribal Chair | Santa Rosa Band of Cahuilla Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist answered and indicated that Tribal Chair Redner was not in the office and transferred our call to the Chair's voicemail. A message was left. There has been no response to date. |
| Mark Cochrane, Co-Chairperson | Serrano Nation of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The phone number was out of service. There has been no response to date. |
| Wayne Walker, Co-Chairperson | Serrano Nation of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |
| Darrell Mike, Chairperson | Twenty-Nine Palms Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. The tribal receptionist indicated that the Chairperson was not in so she sent me to his assistants phone, she did not answer, a message was left. |
| Anthony Madrigal, Historic Preservation Officer | Twenty-Nine Palms Band of Mission Indians | October 11, 2022 | October 11, 2022 | October 25, 2022 | Letter and email describing project and requesting input on concerns was sent October 11, 2022. A phone call was made October 25, 2022. There was no answer, and a message was left. There has been no response to date. |

**From:** Steve Oneil
**To:** THPO Consulting; Megan Black
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 3:11:09 PM
**Attachments:** image002.jpg
image003.png

Good afternoon Ms. Raslich,

Thank you for your reply on behalf of the Agua Caliente Band regarding the Cargo Solution Truck Warehouse project in Hesperia. Your response will be placed in the cultural resources report.

Steve O'Neil

**Stephen O'Neil | Cultural Resources Manager | M.A./RPA**

**UltraSystems Environmental | WBE/DBE/SBE/WOSB**
16431 Scientific Way
Irvine, CA 92618
Office **949.788.4900 ext. 276**
Fax 949.788.4901
Cell 949.677.2391

---

**From:** THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Sent:** Wednesday, October 12, 2022 3:07 PM
**To:** 'mblack@ultrasystems.com' <mblack@ultrasystems.com>; THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Cc:** 'Steve Oneil' <soneil@ultrasystems.com>
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Hello,

We appreciate your effort and thank you for your inquiry.

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Best,

**Nicole A. Raslich, M.A.**
*Archaeological Technician*
Tribal Historic Preservation Office
Agua Caliente Band of Cahuilla Indians
D: +1 (760) 883-1134
C: +1 (760) 985-3615
nraslich@aguacaliente.net

**From:** mblack@ultrasystems.com
**To:** "Ryan Nordness"
**Cc:** "Steve Oneil"
**Subject:** RE: Information Request for the Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Tuesday, October 18, 2022 3:15:44 PM
**Attachments:** image001.jpg

Mr. Nordness,

Thank you for providing the tribes response. We will pass on the tribe's request for AB 52 consultation to the Lead Agency, the City of Hesperia.

Best regards,

**Megan Black Doukakis** | Assistant Project Archaeologist | M.A.

**UltraSystems Environmental** | **WBE/DBE/SBE/WOSB**
16431 Scientific Way Irvine, CA 92618
Office **949.788.4900 Ext. 228** Fax 949.788.4901
Cell 310.850.8127

**Please note that I am working remotely. I can best be reached via email or cell.**

Description: Ultrasystems logo2.tif

please consider the environment before printing this e-mail. Thank you.

*E-Mail Confidentiality Notice: The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. This message may be an attorney-client communication and/or work product and as such is privileged and confidential. If the reader of this message is not the intended recipient, you are hereby notified that you have received this document in error and that any review, dissemination, distribution, or copying of this message is strictly prohibited. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.*

**From:** Ryan Nordness <Ryan.Nordness@sanmanuel-nsn.gov>
**Sent:** Tuesday, October 18, 2022 11:44 AM
**To:** mblack@ultrasystems.com
**Cc:** Steve Oneil <soneil@ultrasystems.com>
**Subject:** Information Request for the Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Megan,
Thank you for reaching out to the Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians) concerning the proposed project area. YSMN appreciates the opportunity to review the project documentation received by the Cultural Resources Management Department on October 17th 2022. The proposed project is located 0.4 miles south of two known prehistoric privy/scatter sites and 0.6 miles northeast from a lithic scatter and hearth site. The area is of concern to the YSMN and the department is interested to consult whenever this project moves into AB52/CEQA territory.
Thank you again for your correspondence, if you have any additional questions or comments please reach out to me at your earliest convenience.
Respectfully,
Ryan Nordness

**Ryan Nordness**
Cultural Resource Analyst
Ryan.Nordness@sanmanuel-nsn.gov
O:(909) 864-8933 Ext 50-2022
M:(909) 838-4053
26569 Community Center Dr Highland, California 92346

---

**From:** Quechan Historic Preservation Officer
**To:** mblack@ultrasystems.com
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 7:50:34 AM
**Attachments:** image001.jpg

This email is to inform you that we have no comments on this project. We defer to the more local Tribes and support their decisions on the projects.

---

**From:** Steve Oneil
**To:** "THPO Consulting"; Megan Black; "THPO Consulting"
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County
**Date:** Wednesday, October 12, 2022 3:11:00 PM
**Attachments:** image002.jpg
image003.png

Good afternoon Ms. Raslich,

Thank you for your reply on behalf of the Agua Caliente Band regarding the Cargo Solution Truck Warehouse project in Hesperia. Your response will be placed in the cultural resources report.

Steve O'Neil

**Stephen O'Neil | Cultural Resources Manager | M.A./RPA**

**UltraSystems Environmental | WBE/DBE/SBE/WOSB**
16431 Scientific Way
Irvine, CA 92618
Office **949.788.4900 ext. 276**
Fax 949.788.4901
Cell 949.677.2391

---

**From:** THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Sent:** Wednesday, October 12, 2022 3:07 PM
**To:** 'mblack@ultrasystems.com' <mblack@ultrasystems.com>; THPO Consulting <ACBCI-THPO@aguacaliente.net>
**Cc:** 'Steve Oneil' <soneil@ultrasystems.com>
**Subject:** RE: Proj# 7187-Cargo Solutions Truck Warehouse Hesperia Project, City of Hesperia, San Bernardino County

Hello,

We appreciate your effort and thank you for your inquiry.

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Best,

**Nicole A. Raslich, M.A.**
*Archaeological Technician*
Tribal Historic Preservation Office
Agua Caliente Band of Cahuilla Indians
D: +1 (760) 883-1134
C: +1 (760) 985-3615
nraslich@aguacaliente.net

# ATTACHMENT D

# CHRIS RECORDS SEARCH BIBLIOGRAPHY

## Report List

**7187 Cargo Warehouse Hesperia**

| Report No. | Other IDs | Year | Author(s) | Title | Affiliation | Resources |
|---|---|---|---|---|---|---|
| SB-00191 | NADB-R - 1060191; Voided - 73-12.2A | 1973 | SMITH, GERALD A. | ARCHAEOLOGICAL, HISTORICAL AND PALEONTOLOGICAL SITE SURVEY FOR COUNTY SERVICE AREA NO. 70 IMPROVEMENT ZONE "J", ASSESSMENT OF IMPACT AND RECOMMENDATIONS | SAN BERNARDINO COUNTY MUSEUM ASSOCIATION | 36-002208 |
| SB-02448 | NADB-R - 1062448; Voided - 91-8.5 | 1991 | LERCH, MICHAEL K. | CULTURAL RESOURCES ASSESSMENT OF SERENE HOMES TENTATIVE TRACT 13845, MORONGO VALLEY, SAN BERNARDINO COUNTY, CALIFORNIA | MICHAEL K. LERCH & ASSOCIATES | |
| SB-02476 | NADB-R - 1062476; Voided - 91-11.6 | 1991 | MCKENNA, JEANETTE A. | A PHASE I LINEAR SURVEY: CULTURAL RESOURCES INVESTIGATIONS FOR THE HESPERIA IMPROVEMENT DISTRICT, HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA | MCKENNA ET AL. | |
| SB-02732 | NADB-R - 1062732 | 1992 | PARR, ROBERT E. | AN ARCHAEOLOGICAL ASSESSMENT OF TENTATIVE PARCEL MAP #14242 BALDY MESA, SAN BERNARDINO COUNTY,CA | CSUB | 36-004179 |
| SB-04036 | NADB-R - 1064036 | 2004 | CERRETO, RICHARD and CHRISTY MALAN | CULTURAL RESOURCE ASSESSMENT FOR PARCEL 3, APN: 3064-591-17, CITY OF HESPERIA, SAN BERNARDINO COUNTY, CA. 18PP | ANALYTIC ARCHAEOLOGY | 36-020263 |
| SB-04284 | NADB-R - 1064284 | 2001 | ALEXANDROWICZ, JOHN STEPHEN | HISTORIC ARCHAEOLOGY AT JOHN E. DUFTON'S HOMESTEAD. 134 PP | ACS | 36-010287, 36-010288 |
| SB-04285 | NADB-R - 1064285 | 2004 | GREEN, JULIA K. | CULTURAL RESOURCES INVENTORY & EVALUATION: TIMBISHA SHOSHONE HOTEL & CASINO, SAN BERNARDINO COUNTY, CA. 22PP | ECORP | |
| SB-05107 | NADB-R - 1065107 | 2002 | CHANDLER, EVELYN N, COTTERMAN, CARY D, and MASON, ROGER D | CULTURAL RESOURCES SURVEY OF THE PROPOSED CALIFORNIA CHARTER ACADEMY HESPERIA, SAN BERARDINO COUNTY, CALIFORNIA | | |

# ATTACHMENT E

# CONFIDENTIAL DPR CONTINUATION SHEET –

# CRM TECH 3937-1H

Site 36-010288 was first record in August 2000 as a historic campsite/homestead site comprised of a trail/dirt road, running in a general northwest to southeast direction, and a refuse scatter consisting of 2 features, architectural debris and a refuse scatter (Alexandrowiez 2000). The site measured approximately 209 x 140 feet in size.

The site was later updated in July 2015 by McKenna. She expanded the original site boundary to include the entire homestead which measured a ½ x ½ mile in size. According to the site record the homestead was established in 1892 by John E. Dufton in the southwest quarter of Section 22 (McKenna 2015). McKenna recorded 13 features, artifact concentrations, and artifacts within the homestead consisting of a dirt road alignment, 1 large refuse scatter with over 100 items, and 9 isolated finds of historic artifacts (McKenna 2015). These resources were located just south of Poplar Street.

The site was revisited on August 31, 2022, during a Phase I field survey of the study area (APN 3064-591-13). The majority of the southern half of the Dufton homestead has been developed for commercial purposes. The recorded refuse scatter and the remnants of a building have been destroyed by the construction of a truck stop. The additional artifacts that McKenna recorded in 2015, along the northern boundary of the property, adjacent to Poplar Street have also been obliterated by the constant clearing of the property of vegetation. During the 2022 survey, it was observed that the property has been recently cleared again, leaving piles of vegetation and modern trash, with no evidence of the resources recorded by McKenna et al. in 2015.

Additional historic artifacts were found during the survey that had not been recorded before. These additional artifacts are located approximately 390 feet south of Poplar Street and 300 feet west of the I-15 Freeway, adjacent to the eastern boundary, but within the boundaries of Site 36-010288. The historic refuse scatter includes two flat-top beverage cans, two round meat cans, and a hinged tobacco tin in addition to approximately 15 historical bottle body fragments with a range of colors (opaque white, colorless, aqua, brown, sun-colored amethyst) along with an aqua bottle base fragment containing the broken text "DR. W…". The refuse scatter appears to be a single episode of household refuse dumping.

The refuse scatter has been heavily disturbed and distributed by the clearing activities that have taken place on the property. No other artifacts were observed within the boundaries of the homestead.

**References Cited:**

Alxandrowicz, J.S.
2000 California Historical Resources Inventory record forms, Site 36-010288. On file, South Central Coastal Information Center, California State University, Fullerton.

McKenna, Jeanette et al.
2015 California Historical Resources Inventory record forms, Site 36-010288. On file, South Central Coastal Information Center, California State University, Fullerton.

**Report Citation:** O'Neil, Stephen, Brent Johnson and Megan Black Doukakis (2022), *Phase I Cultural Resources Inventory for the Cargo Solutions Truck Warehouse, City of Hesperia, San Bernardino County, California*. UltraSystems Environmental, Irvine, California. Prepared for Cargo Solutions Express, Fontana, California.

State of California—Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

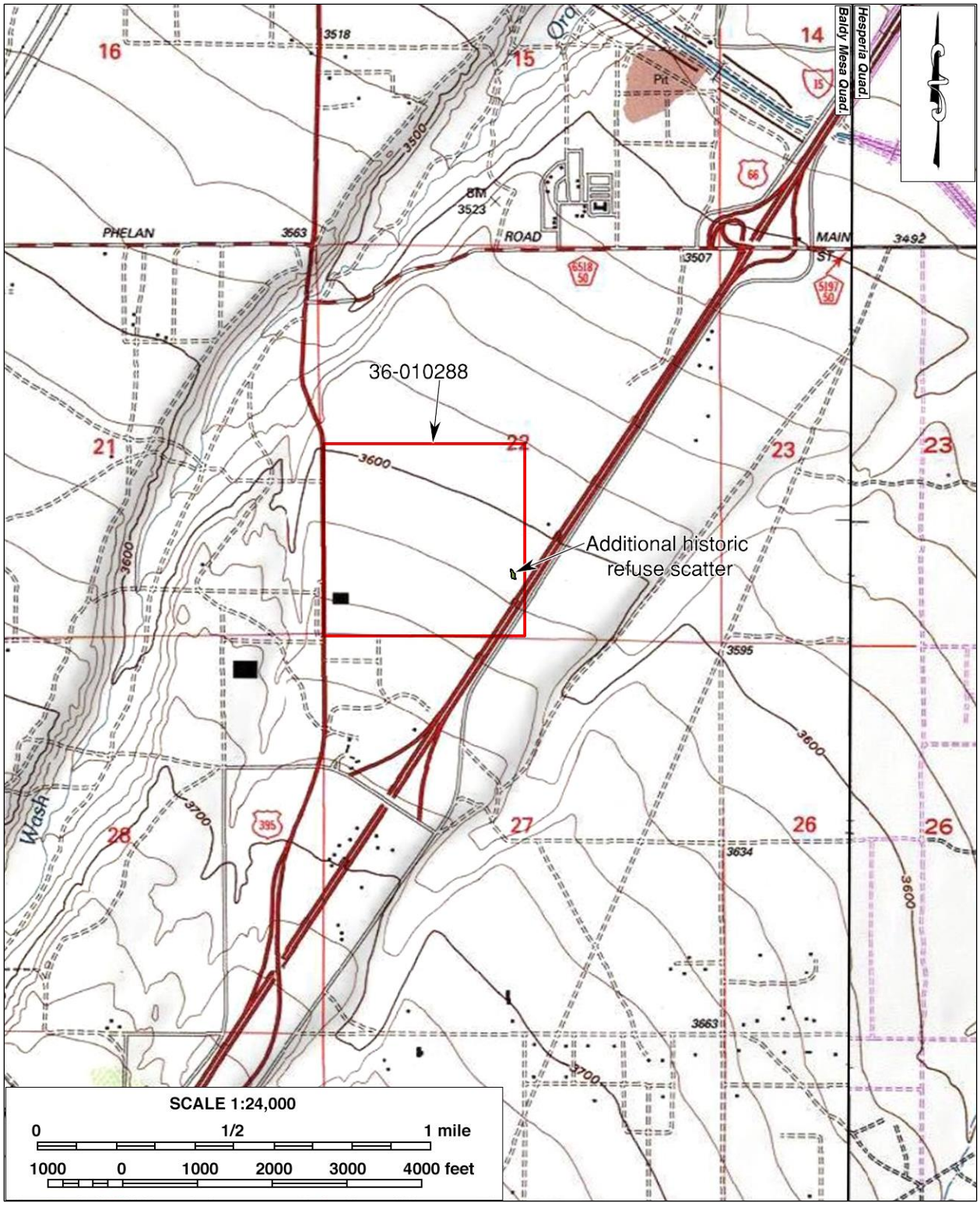
# LOCATION MAP

**Primary #** 36-010288H
**HRI #**
**Trinomial** CA-SBR-10288H



***Resource Name or #** (Assigned by recorder) 36-010288 update

***Map Name:** Baldy Mesa & Hesperia, Calif. ***Scale:** 1:24,000 ***Date of Map:** 1996; Revised 1980






*Required information

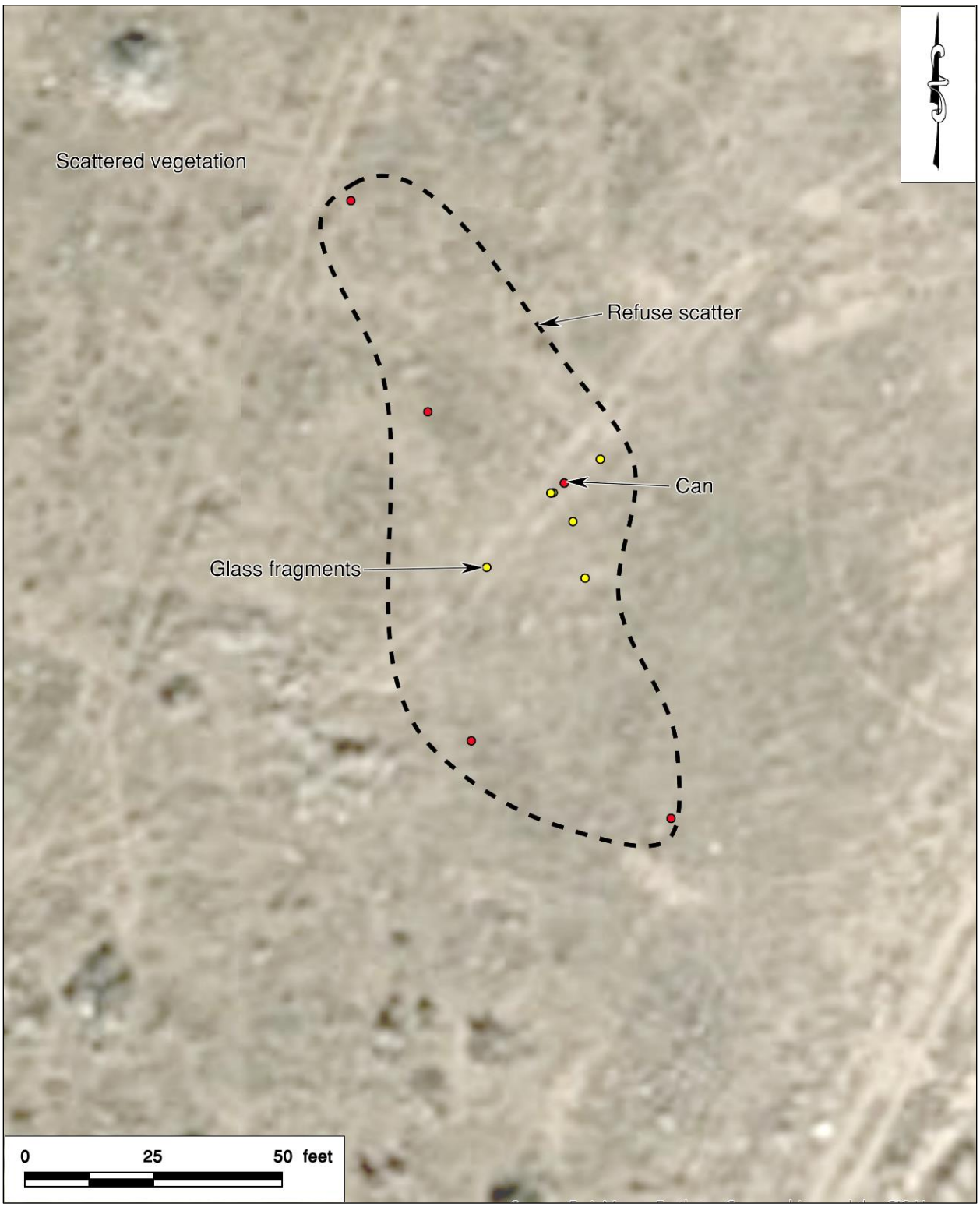
State of California—Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

# SKETCH MAP

**Primary #** 36-010288H
**HRI #**
**Trinomial** CA-SBR-10288H

**Page** 3 **of** 3 ***Resource Name or #** (Assigned by recorder) 36-010288 update

***Drawn by:** Daniel Ballester ***Date:** September 2, 2022






NOTE: Include bar scale and north arrow

# APPENDIX D2

# PALEONTOLOGICAL RECORDS SEARCH

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

August 28, 2022

UltraSystems Environmental
Attn: Stephen O'Neil

re: Paleontological resources for the Truck Warehouse Hesperia Project (7187)

Dear Stephen:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Truck Warehouse Hesperia project area as outlined on the portion of the Baldy Mesa USGS topographic quadrangle map that you sent to me via e-mail on August 16, 2022. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

| Locality Number | Location | Formation | Taxa | Depth |
|---|---|---|---|---|
| LACM VP 1224 | North of Hesperia, near Dean Ave. & Dean Place | Shoemaker Gravel | Camel family (Camelidae) | Unknown |
| LACM VP 3353 | Second Street at sand & gravel pit; near top of bluff, west bank of Mojave River | Shoemaker Gravel Formation | Horse (*Equus*) | Unknown |
| LACM VP 3352 | West bank of the Mojave River, north end of Victorville (more precise locality not available) | Shoemaker Gravel Formation | Horse (*Equus*) | Unknown |
| LACM VP 3498 | West of Portland Cement Co. plant in bluffs on west side of Mojave River, midway between I-15 and Air Expressway Rd. | Shoemaker Gravel | Horse (Equus); deer (Cervidae); antelope (Antilocapridae) | Unknown |
| LACM VP 7786 | Southern California | Alluvium | Vole (*Microtus mexicanus*) | 10-11 feet |

| | | | | |
|---|---|---|---|---|
| | Logistics Airport | (Pleistocene, moderately indurated fine to medium grained silty sandstone) | | bgs |
| LACM VP 5942-5950 | Along Avenue S from Palmdale to Lake Los Angeles | Unknown formation (Holocene) | Kingsnake (*Lampropeltis*), Lizard (Lacertilia), leopard lizard (*Gambelia*); snake (Ophidia), gopher snake (*Pituophis*); rabbit (*Lagomorpha*), rodent (Rodentia), Pocket gopher (*Thomomys*), pocket mouse (*Chaetodippus*), kangaroo rat (*Dipodomys*); birds (Aves) | 0-9 ft bgs |

*VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface*

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

# APPENDIX E

# CUSTOM SOILS REPORT

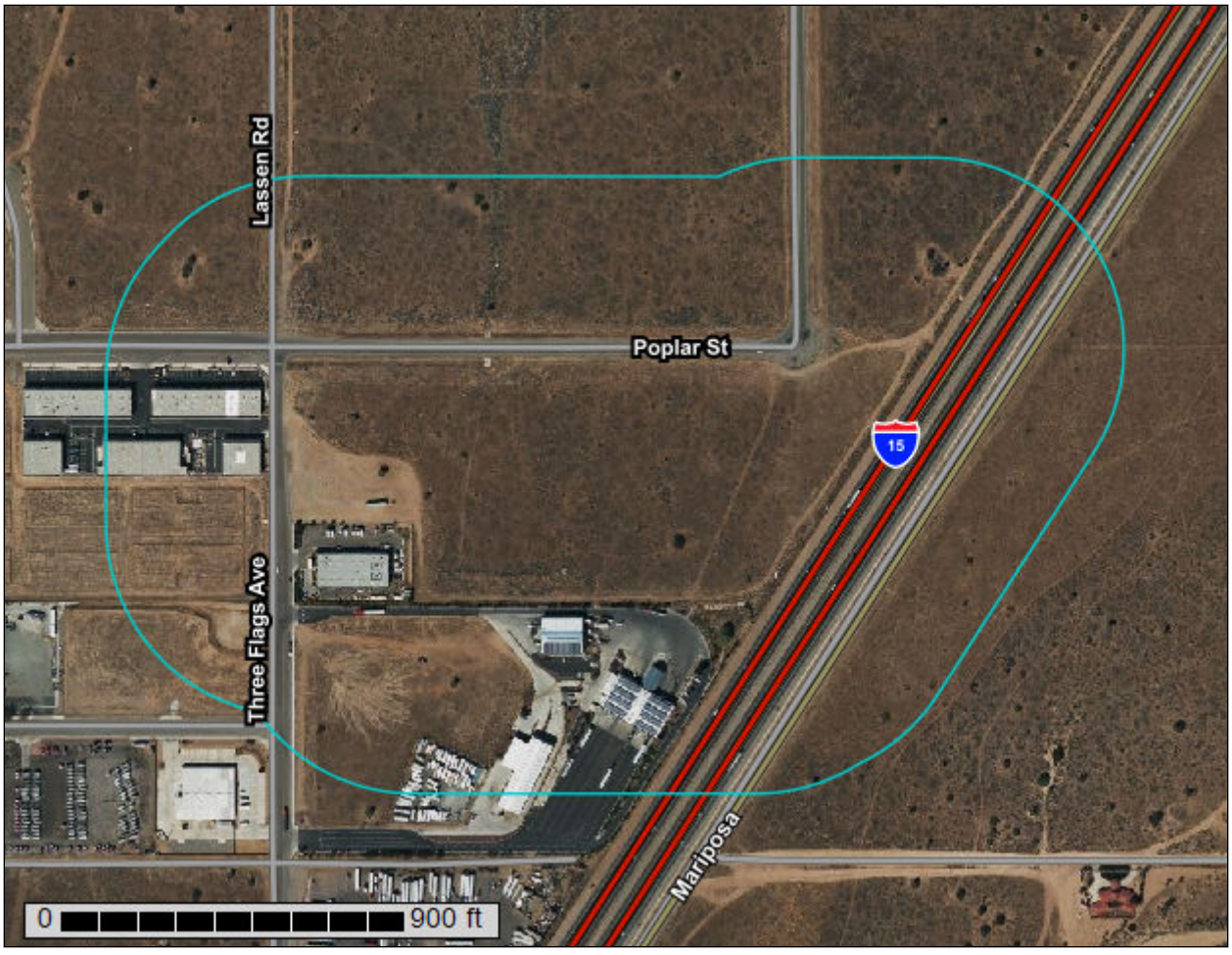
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for San Bernardino County, California, Mojave River Area




August 22, 2022

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

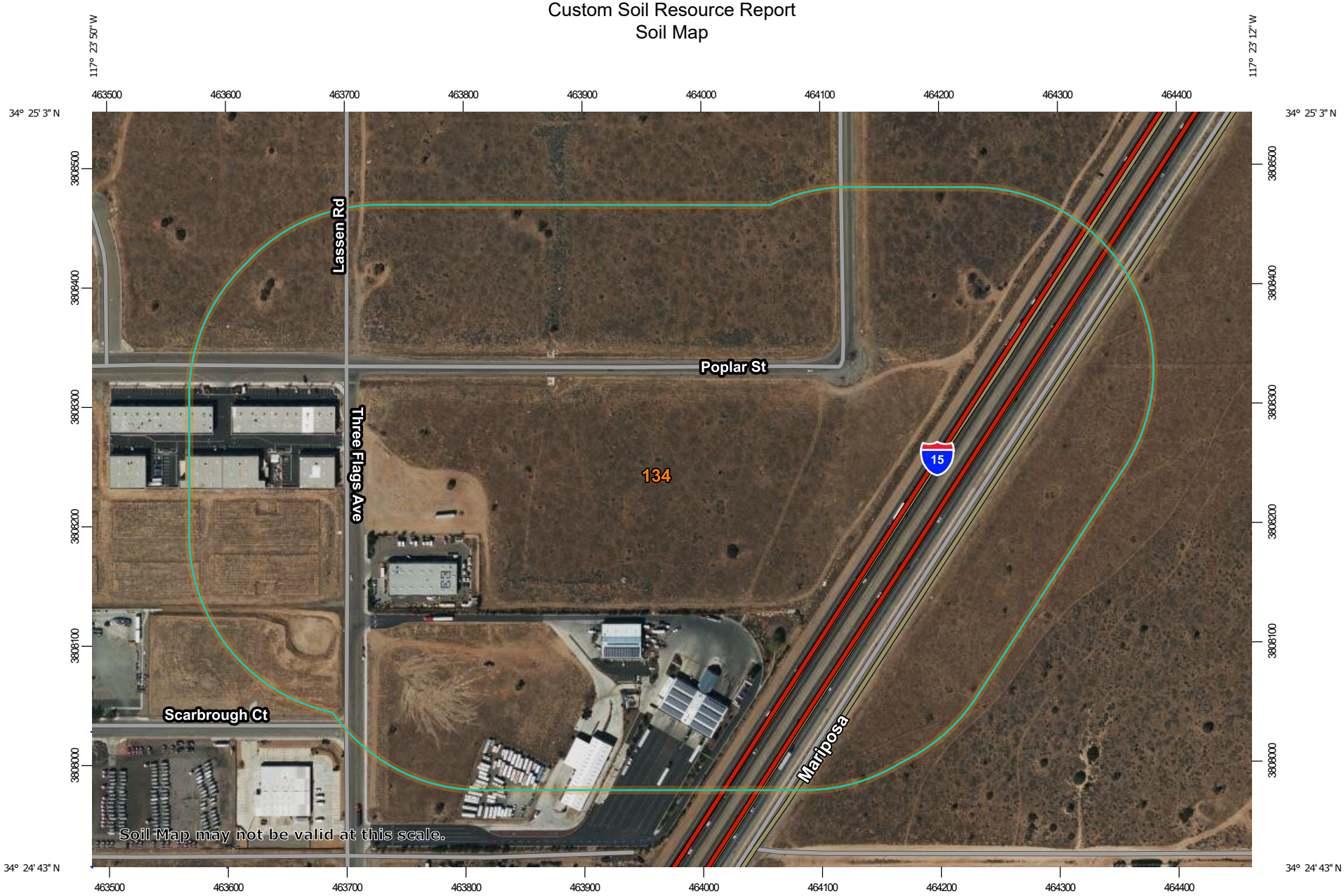
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 85.5 | 100.0% |
| **Totals for Area of Interest** | | **85.5** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# San Bernardino County, California, Mojave River Area

## 134—HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES

### Map Unit Setting

*National map unit symbol:* hks7
*Elevation:* 200 to 4,000 feet
*Mean annual precipitation:* 6 to 9 inches
*Mean annual air temperature:* 57 to 61 degrees F
*Frost-free period:* 150 to 250 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Hesperia and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hesperia

#### Setting

*Landform:* Fan aprons
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from granite sources

#### Typical profile

*H1 - 0 to 6 inches:* loamy fine sand
*H2 - 6 to 60 inches:* sandy loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 10 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 5.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* A
*Ecological site:* R030XE006CA - COARSE LOAMY
*Hydric soil rating:* No

### Minor Components

#### Cajon

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Wrightwood**

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Bull trail**

*Percent of map unit:* 3 percent
*Hydric soil rating:* No

**Unnamed soils**

*Percent of map unit:* 2 percent
*Hydric soil rating:* No

# Soil Information for All Uses

## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

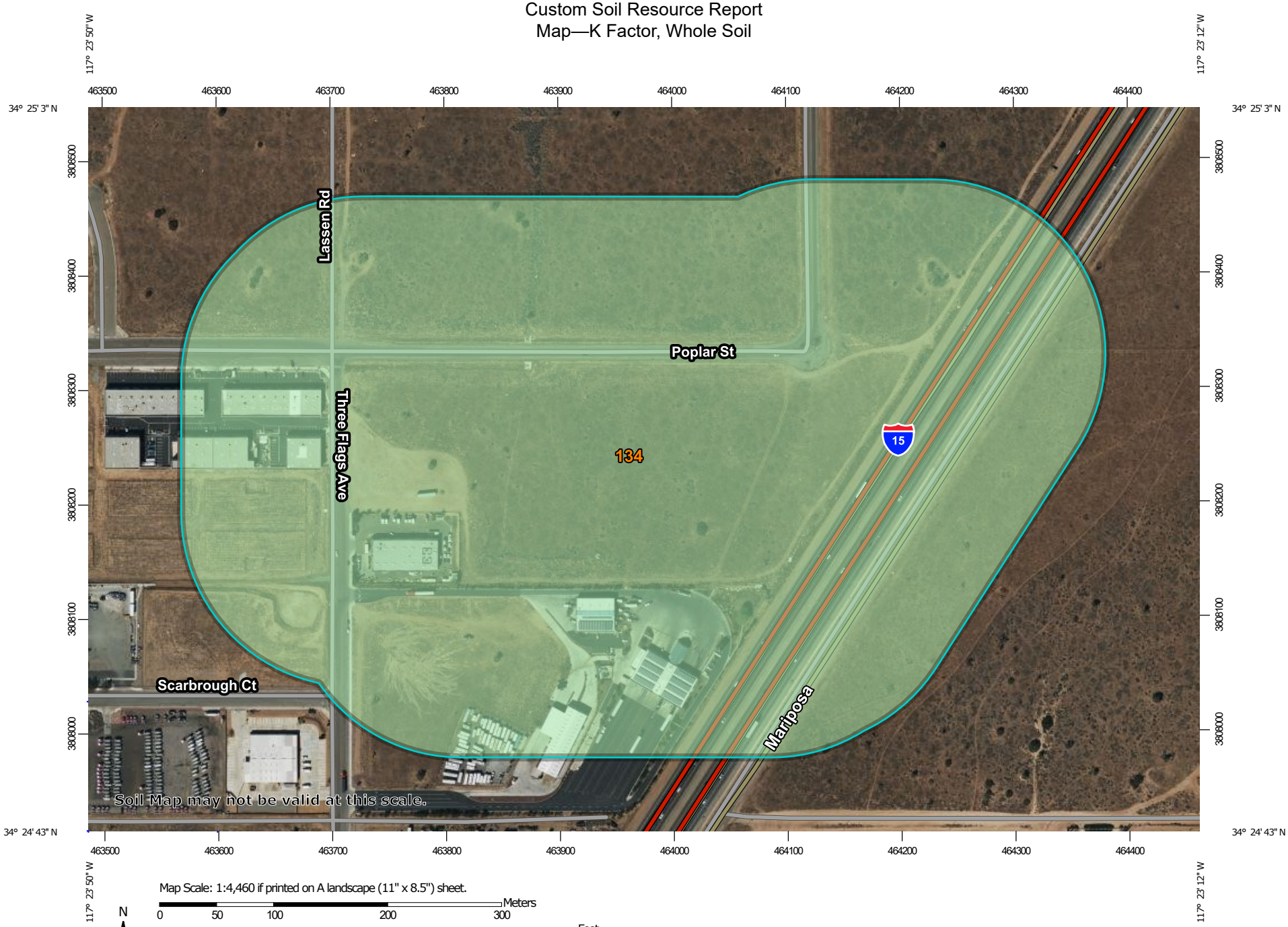
### K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

# Custom Soil Resource Report
## Map—K Factor, Whole Soil




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Lines**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Points**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### Table—K Factor, Whole Soil

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | .28 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

### Rating Options—K Factor, Whole Soil

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

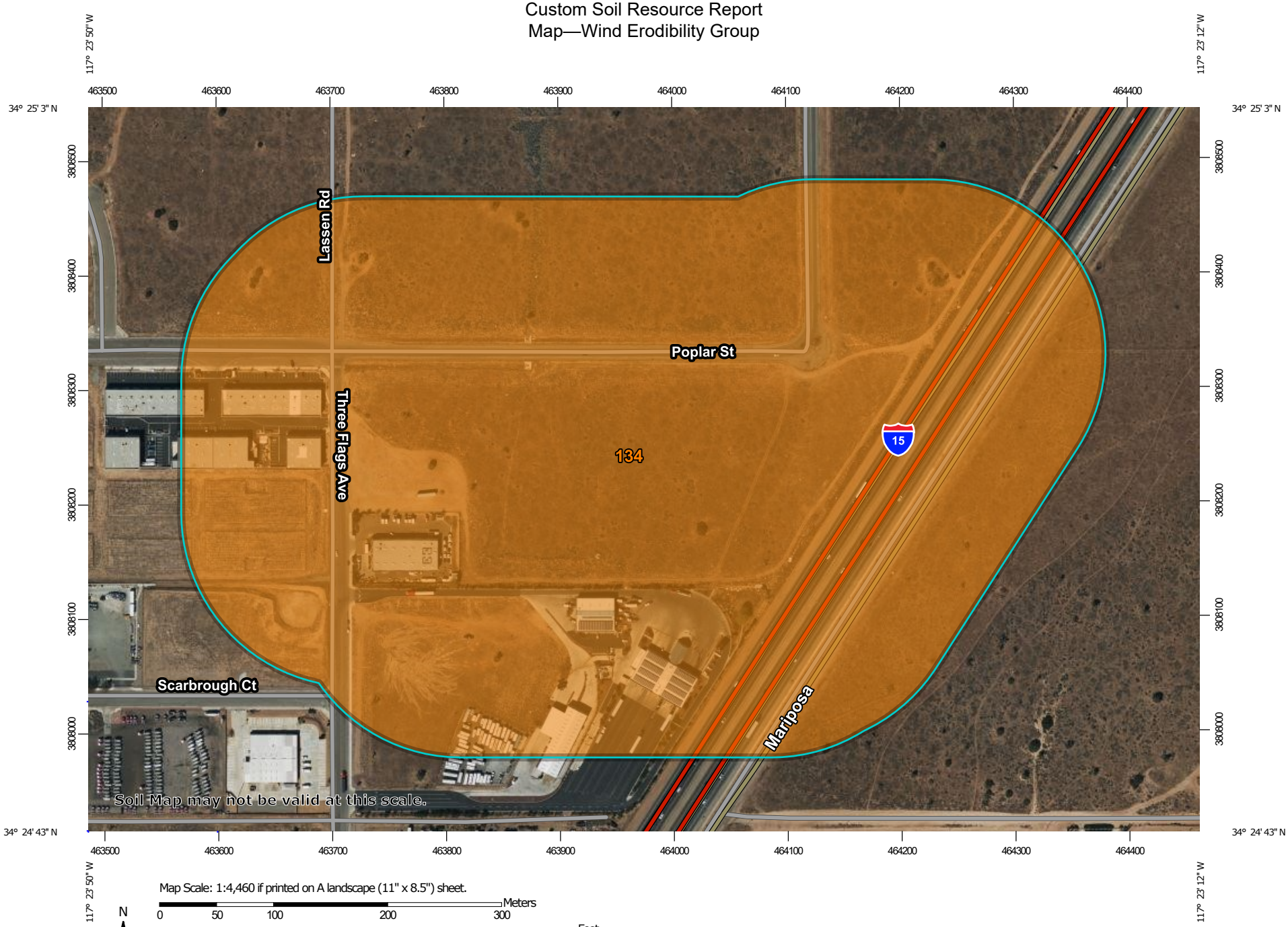
*Tie-break Rule:* Higher

*Layer Options (Horizon Aggregation Method):* All Layers (Weighted Average)

## Wind Erodibility Group

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

# Custom Soil Resource Report
## Map—Wind Erodibility Group




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Soil Rating Lines**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Soil Rating Points**

1
2
3
4
4L
5
6
7
8
Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

| MAP LEGEND | MAP INFORMATION |
| --- | --- |
| | imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. |

### Table—Wind Erodibility Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 2 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

### Rating Options—Wind Erodibility Group

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Lower

# Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

## Plasticity Index

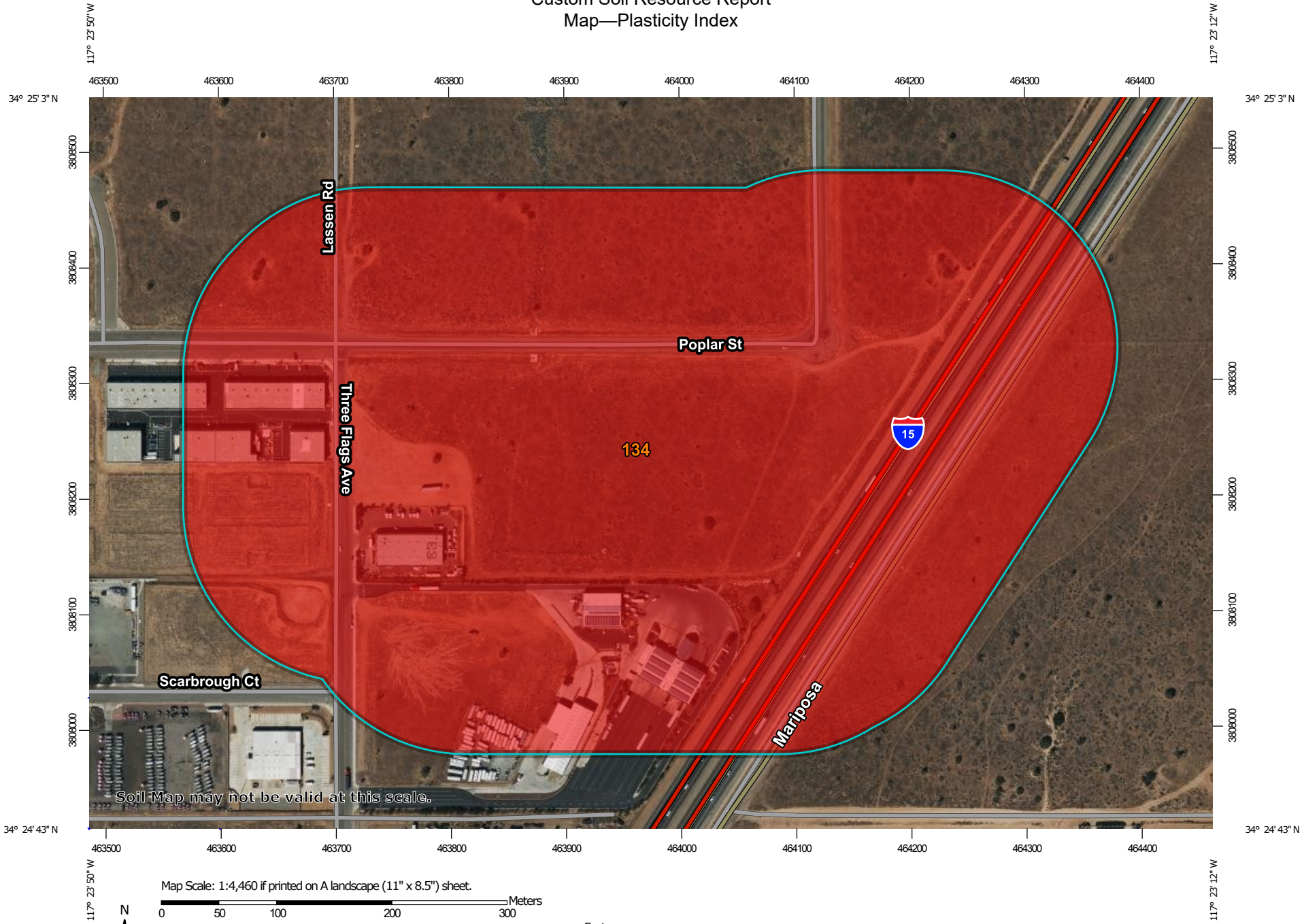
Plasticity index (PI) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid.

The plastic limit is the water content that corresponds to an arbitrary limit between the plastic and semisolid states of a soil. The liquid limit is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state.

Soils that have a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material. Highly and moderately plastic clays have large PI values. Plasticity index is used in classifying soils in the Unified and AASHTO classification systems.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

# Custom Soil Resource Report
## Map—Plasticity Index




Map Scale: 1:4,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

= 2.3

Not rated or not available

**Soil Rating Lines**

= 2.3

Not rated or not available

**Soil Rating Points**

= 2.3

Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Table—Plasticity Index

| Map unit symbol | Map unit name | Rating (percent) | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| 134 | HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES | 2.3 | 85.5 | 100.0% |
| **Totals for Area of Interest** | | | **85.5** | **100.0%** |

## Rating Options—Plasticity Index

*Units of Measure:* percent

*Aggregation Method:* Dominant Component

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* All Layers (Weighted Average)

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United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

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# APPENDIX F

# REC CHECK REPORT

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

# Aerial Photo & Topographic Map Research

REPORT RESULTS



## Report Results for:

Megan Black
UltraSystems Environmental Inc.
16431 Scientific Way
Irvine, CA 92618
2104769356 AOTO
September 13, 2022

## Site Information:

Cargo Solutions-Truck Warehouse
APNs 3064-591-17, -18, -12, and -13 and 3064-631-01
Hesperia, CA 92344

ENVIRONMENTAL RECORD SEARCH

**Subject Site:**

*Client's Project #:* **7187**
*Address:* **APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
*City, State Zip:* **Hesperia, CA 92344**

**ERS Order #:**

**2104769356 AOTO**

**Prepared For:**

*Name:* **Megan Black**
*Company:* **UltraSystems Environmental Inc.**
*Address:* **16431 Scientific Way**
*City, State Zip:* **Irvine, CA 92618**

**Date:**

**September 13, 2022**

**Prepared By:**

*Name:* **Ryan Cardenas**
*Phone #:* **(714) 669-8096 Ext. 1001**

Enclosed are the results of our…..

# Aerial Photograph and Topographic Map Research

Thank you for selecting ***Environmental Record Search***!

To aid you in locating your site on the imagery provided, we have placed a box over/surrounding your site.

***Note:*** *This box is not representative of your site's boundaries. It is simply a tool to assist you with the location of your site within the image. The box has been placed in the same location on each image to help you locate your site easily from year to year. If you have any problems locating your site, please call us. We are here to help.*

Aerial photo years available:

| | | | | |
|---|---|---|---|---|
| 2020 | 2016 | 2012 | 2009 | 2005 |
| 1994 | 1985 | 1978 | 1968 | 1952 |
| 1938 | | | | |

This report includes the following USGS Topographic Map Series:

| Quadrangle Name | Series | Original Scale | Contour Interval (ft) | Years |
|---|---|---|---|---|
| BALDY MESA | 7.5 Minute | 1:24,000 | 20' | 2018, 2012, 1999, 1985, 1969, 1957 |
| HESPERIA | 7.5 Minute | 1:24,000 | 20' | 2018 |
| HESPERIA | 15 Minute | 1:62,500 | 50' | 1942, 1936, 1923, 1912, 1906 |

All terms, conditions, and limitations normally associated with work contracted by **ERS** and presented or associated with aerial photography are in effect at all times. This letter summary, all its information, and content have been derived from and rely upon the reviewed aerial photographs. **ERS's** research has only been based on these images; **ERS** did not perform any type of independent investigation of any type, including as to the accuracy and/or completeness of the information derived or otherwise obtained from the secondary source or sources.



ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 2020

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ERS
ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 2016

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 2012

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ERS
ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 2008

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ERS
ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 2005

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 1994

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 1985

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356

N
W E
S



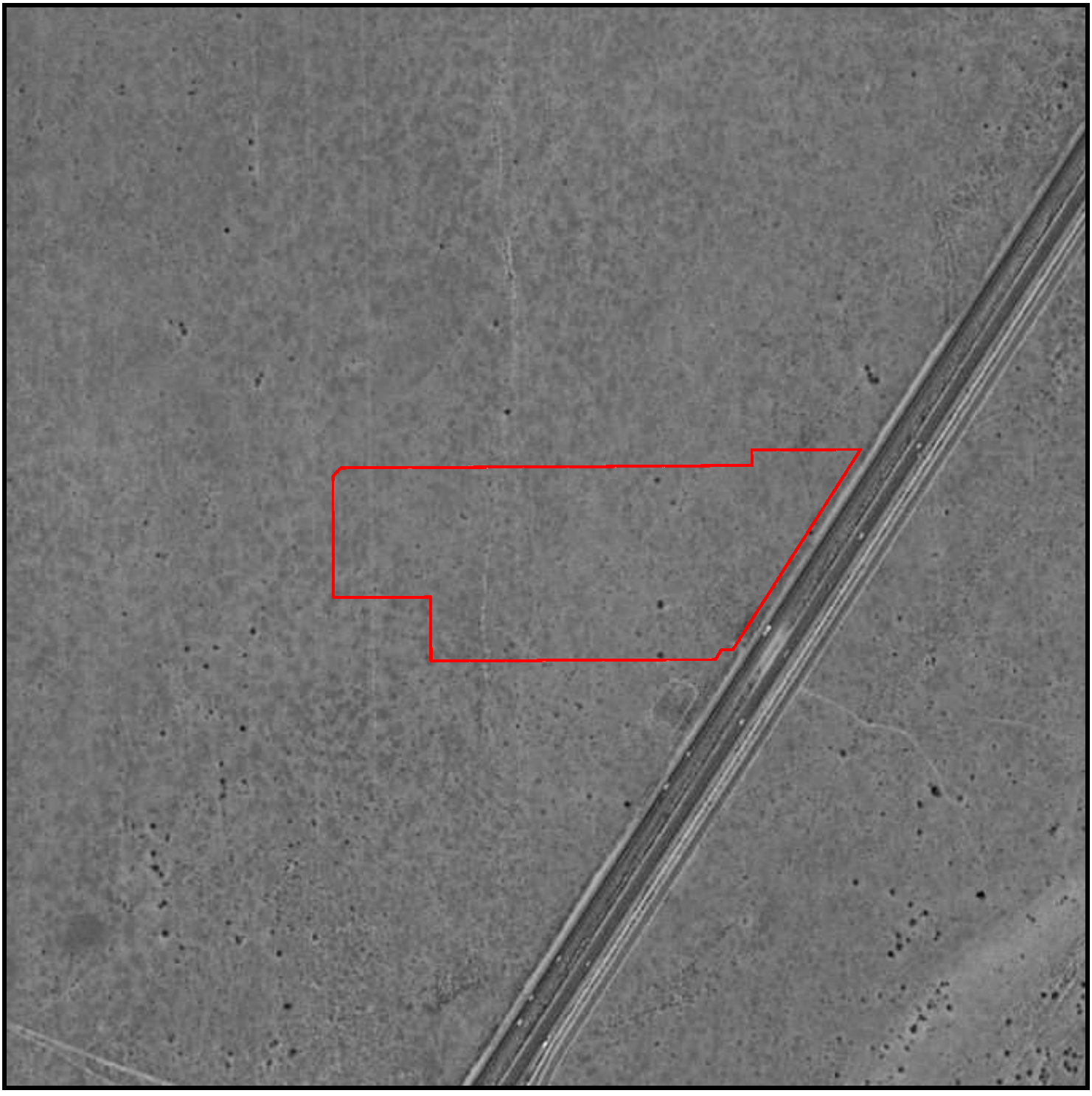
ENVIRONMENTAL RECORD SEARCH

Historical Aerial Photo
Year 1978

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356

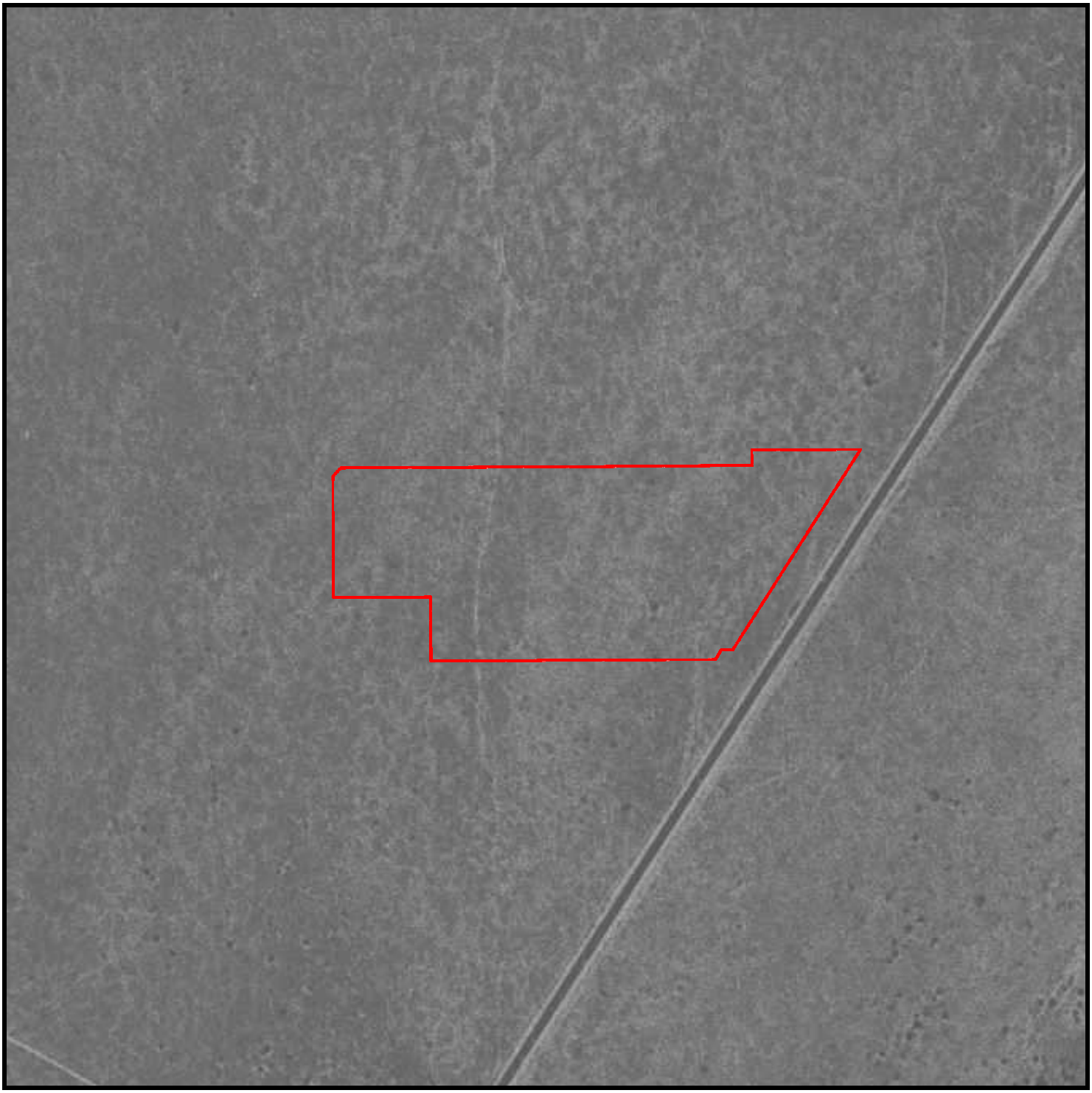
N
W E
S



Historical Aerial Photo
Year 1968

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

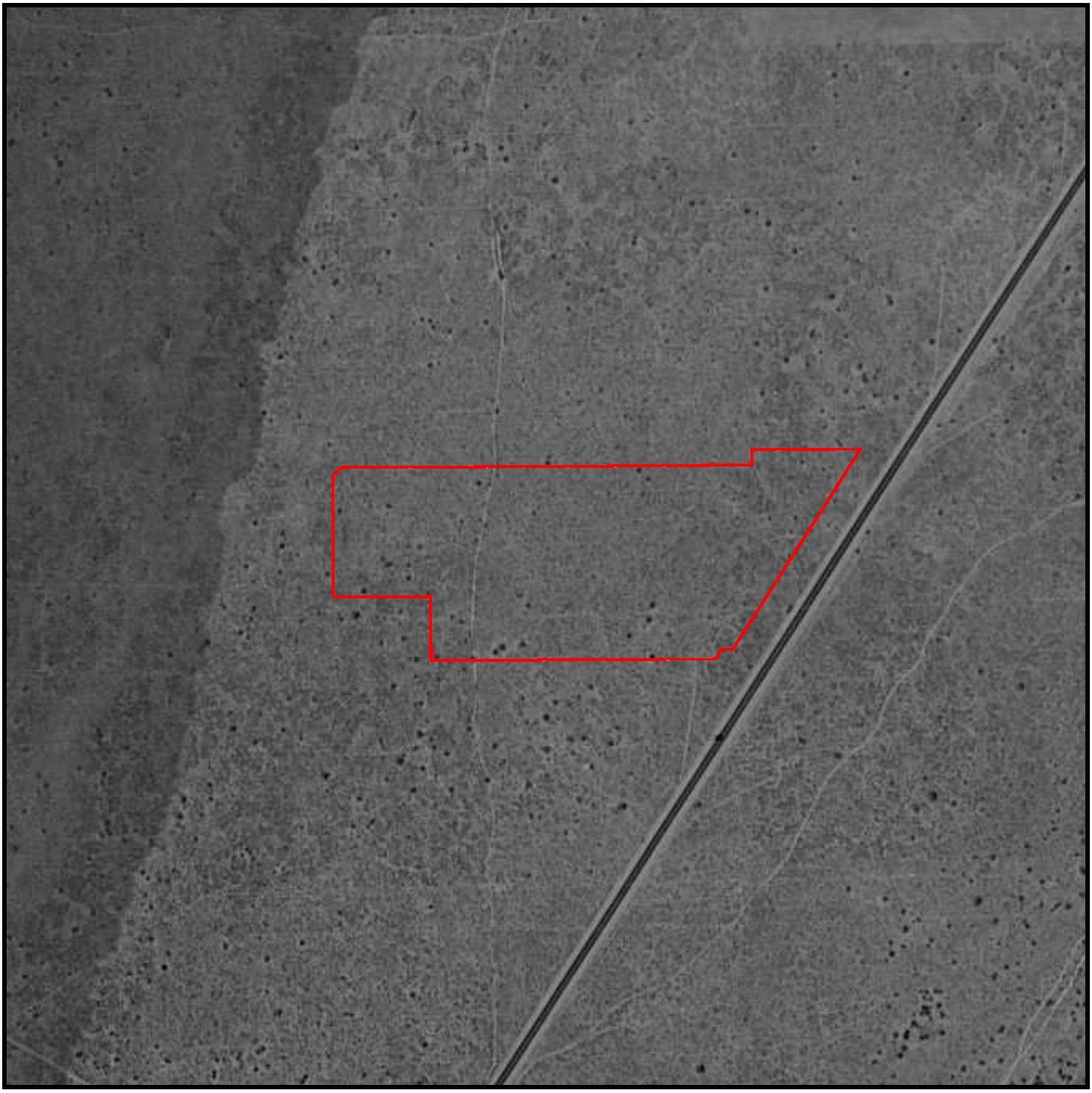
Target Site: 34.414918, -117.392313 Job #: 2104769356



Historical Aerial Photo
Year 1952

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

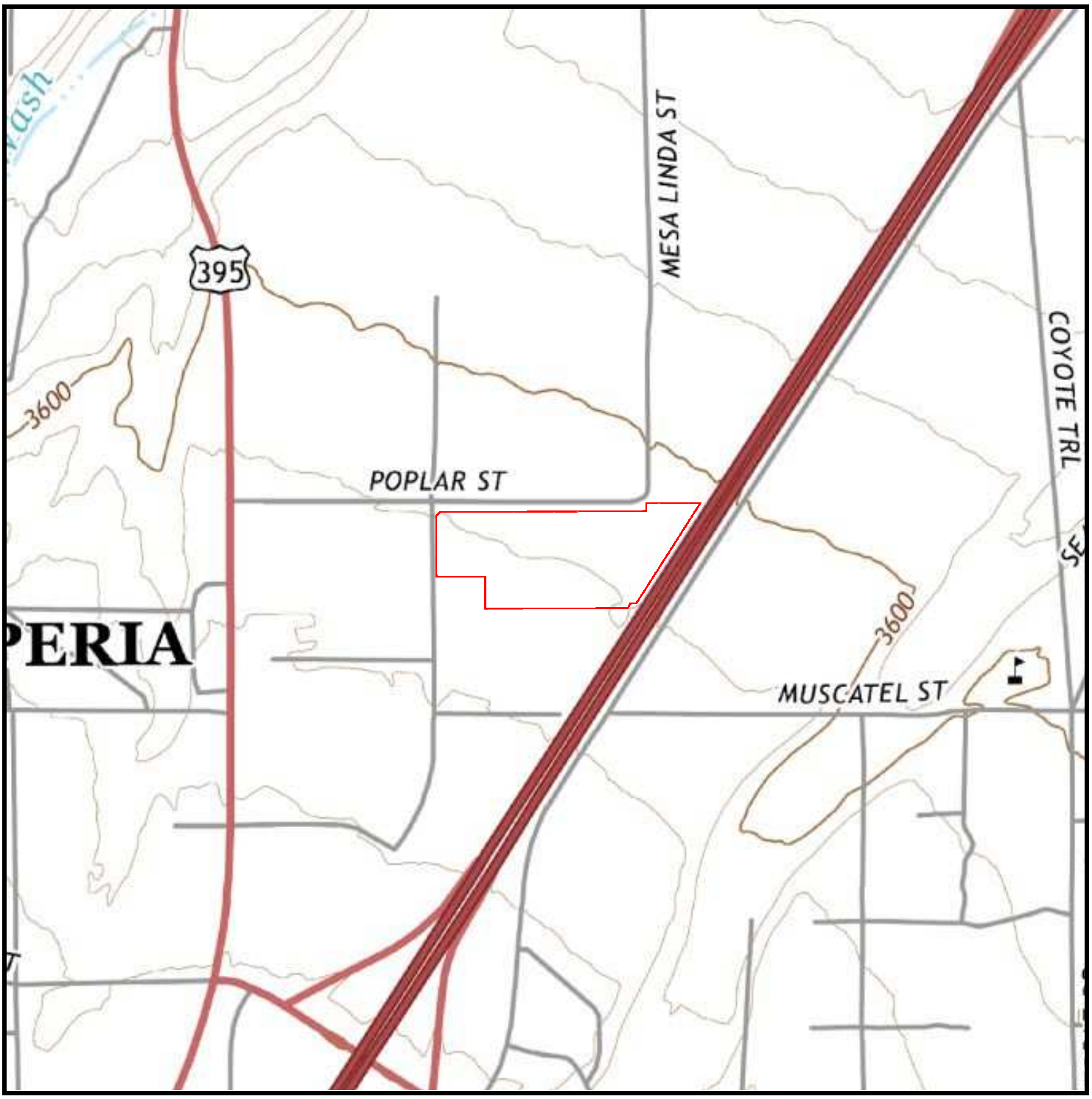
Target Site: 34.414918, -117.392313 Job #: 2104769356



Historical Aerial Photo
Year 1938

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



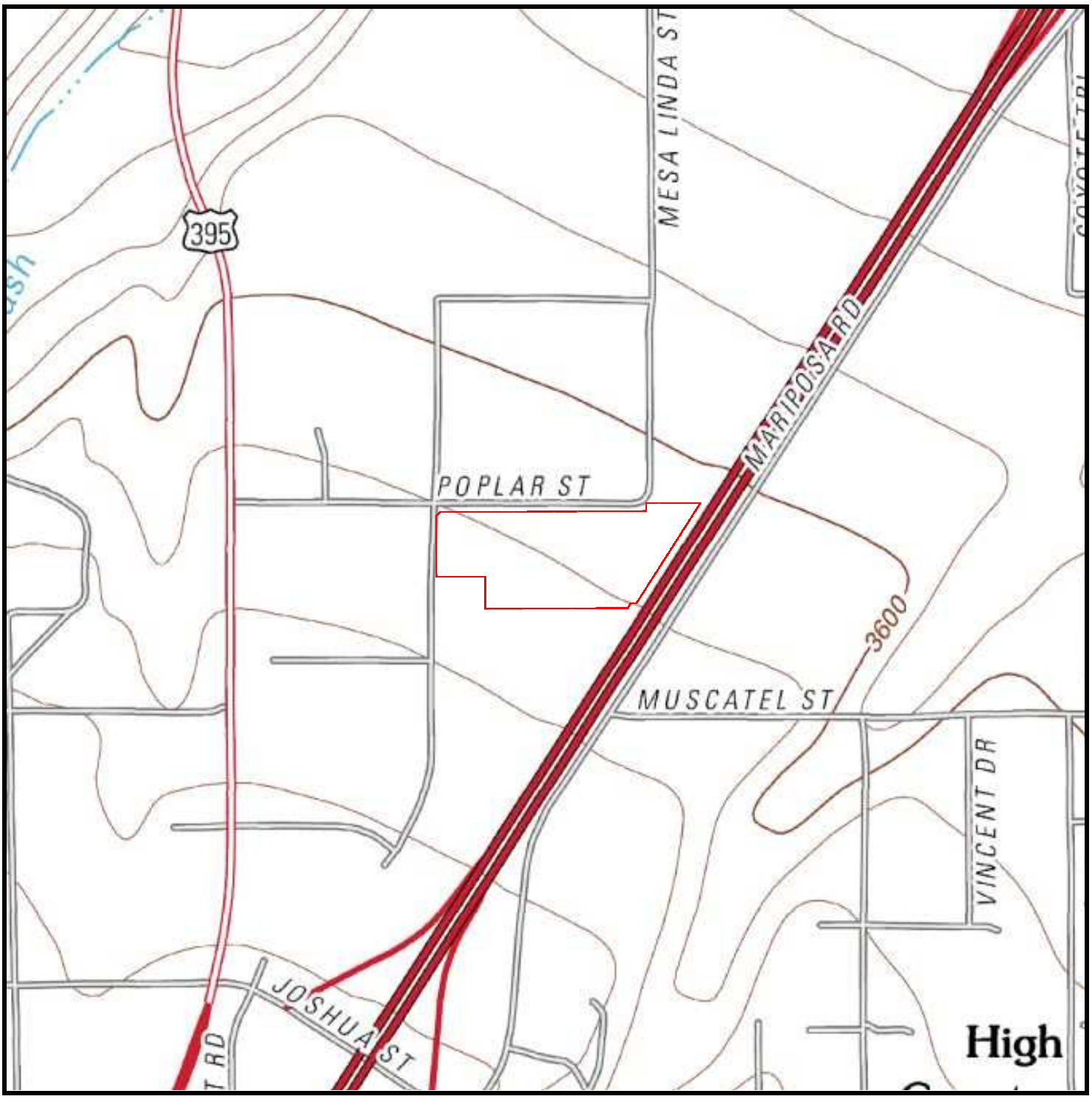

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 2018

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



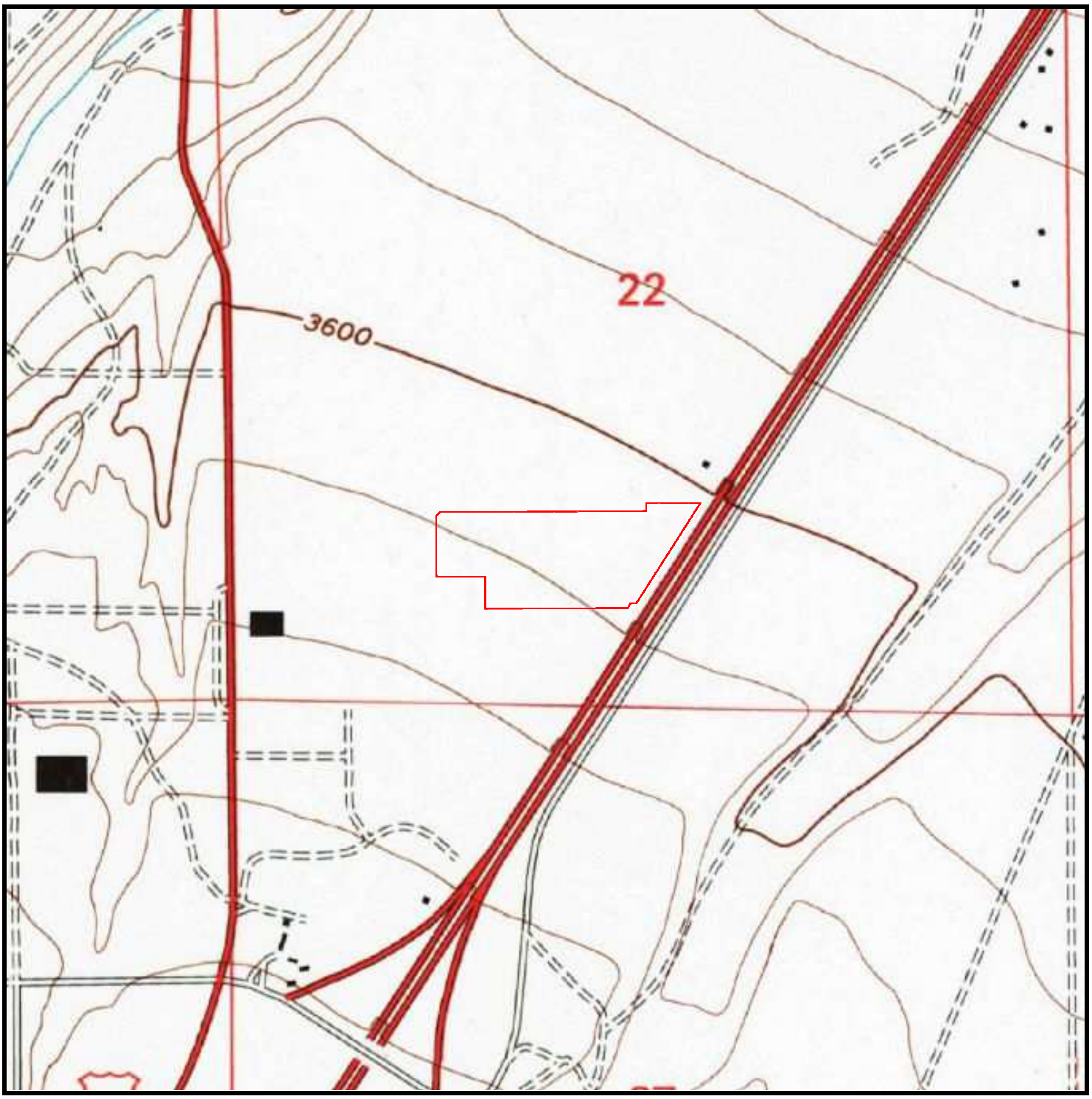

ERS
ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 2012

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



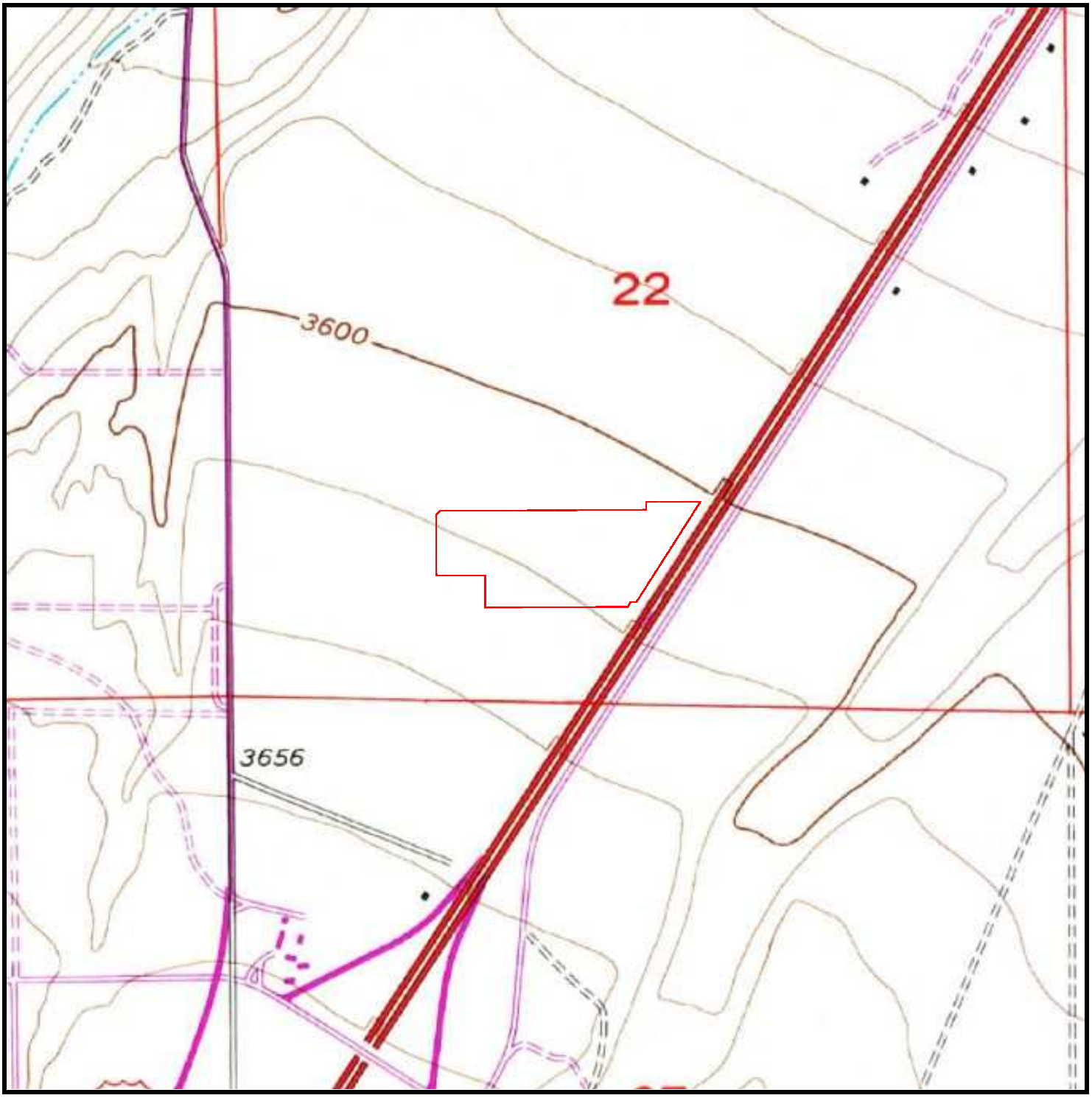

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1999

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356




ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1985

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



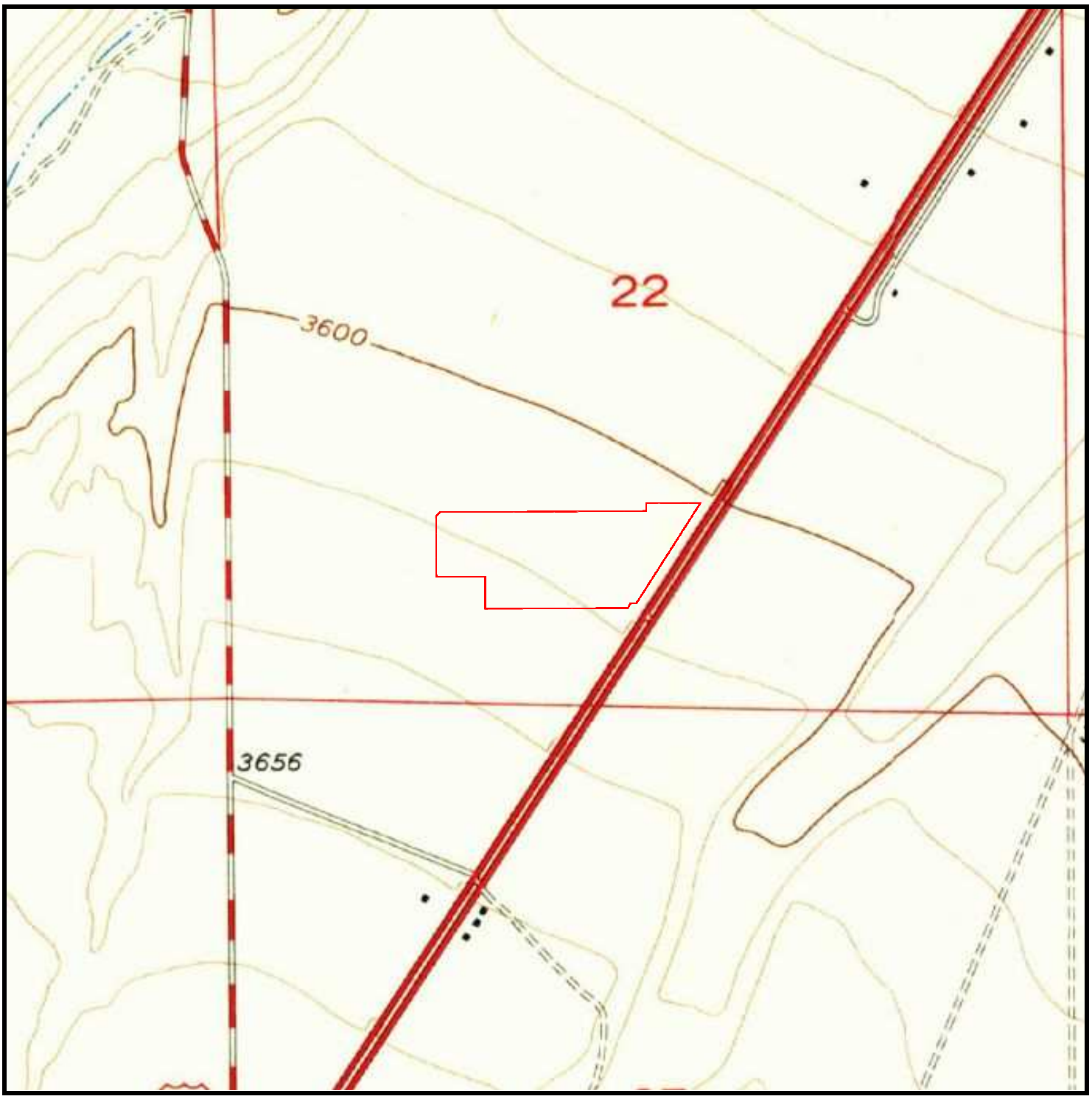

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1969

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

N
W E
S

Target Site: 34.414918, -117.392313 Job #: 2104769356



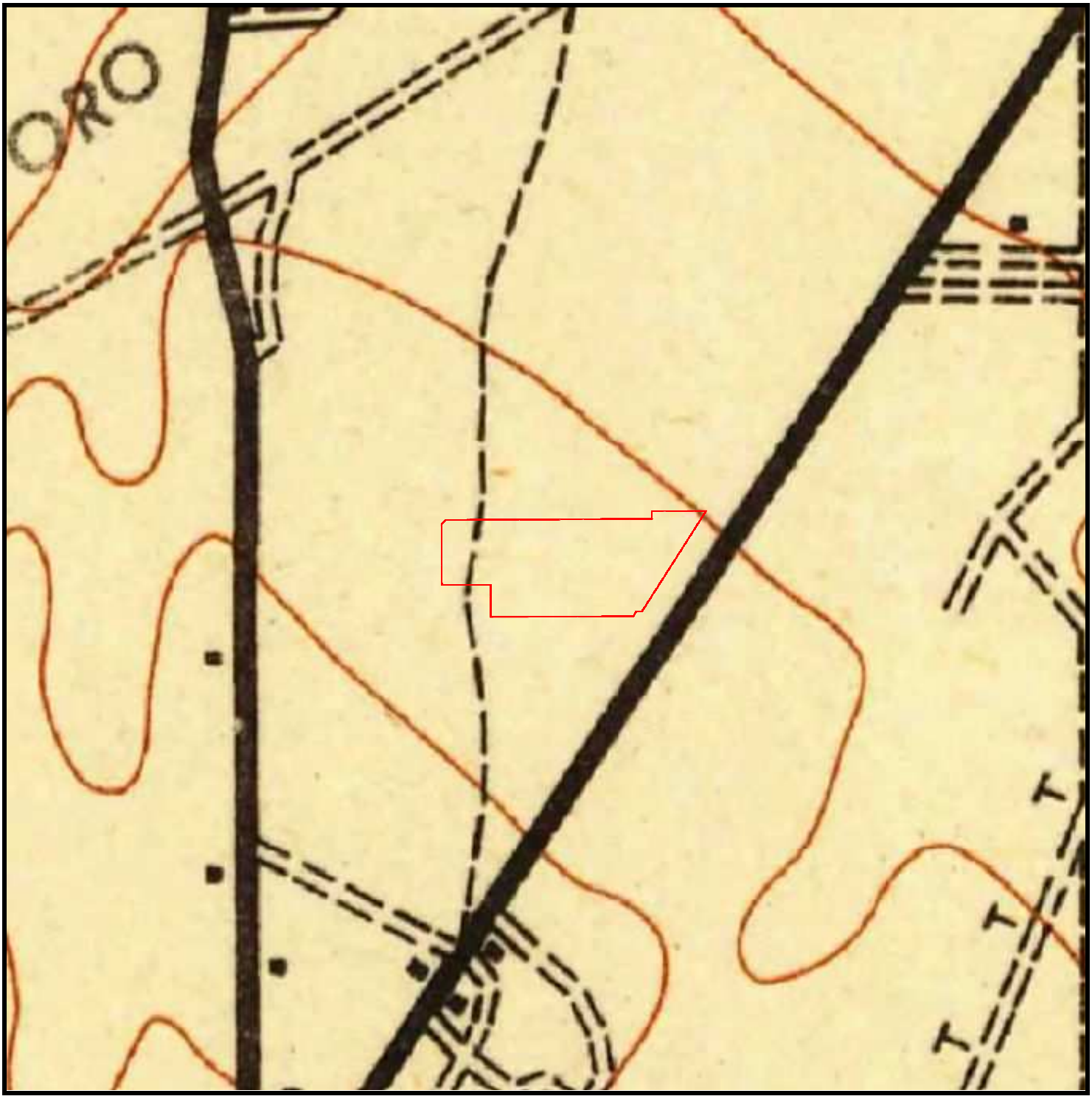

ERS
ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1957

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



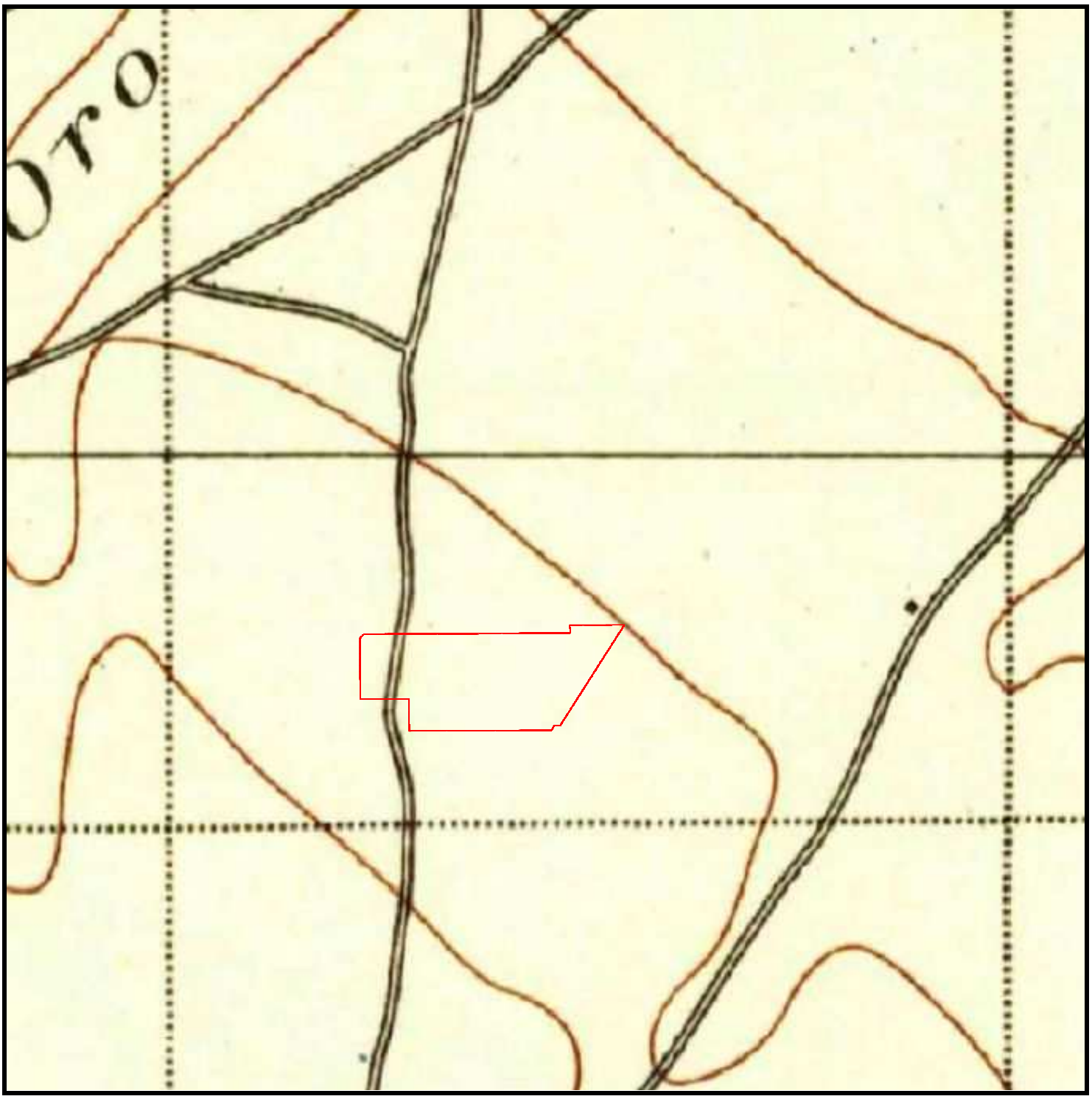

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1942

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

N
W E
S

Target Site: 34.414918, -117.392313 Job #: 2104769356



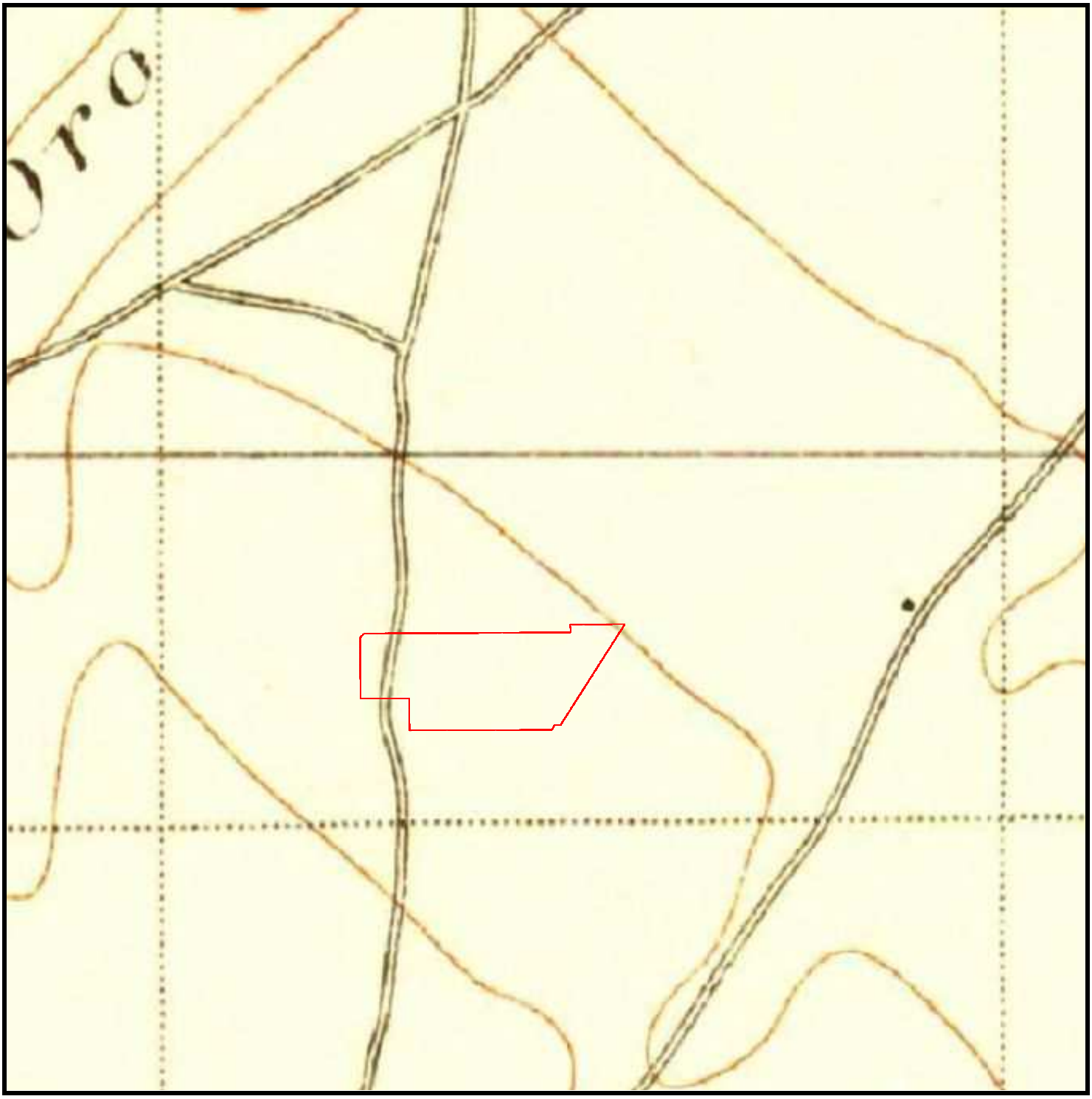

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1936

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356

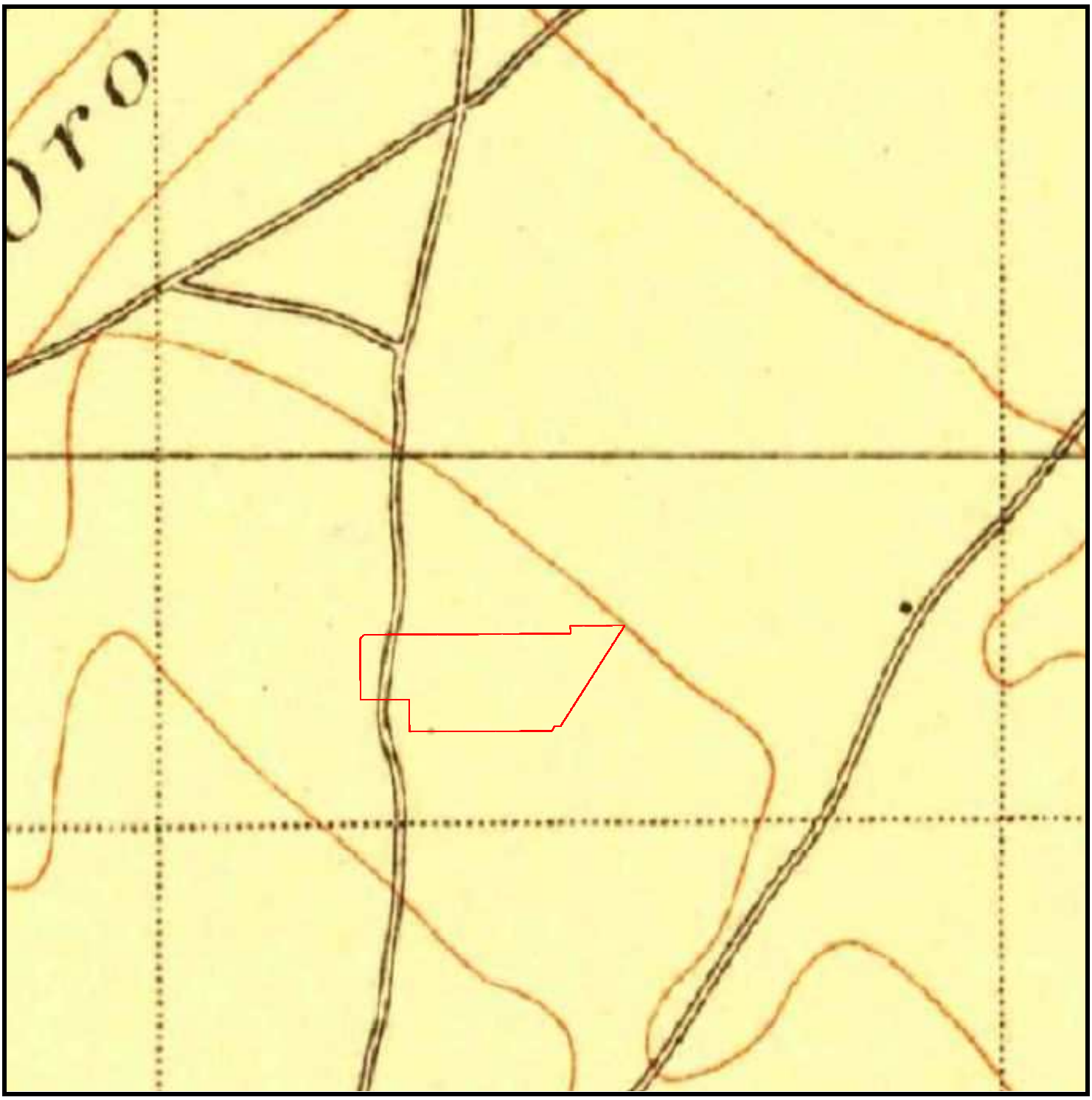


ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1923

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



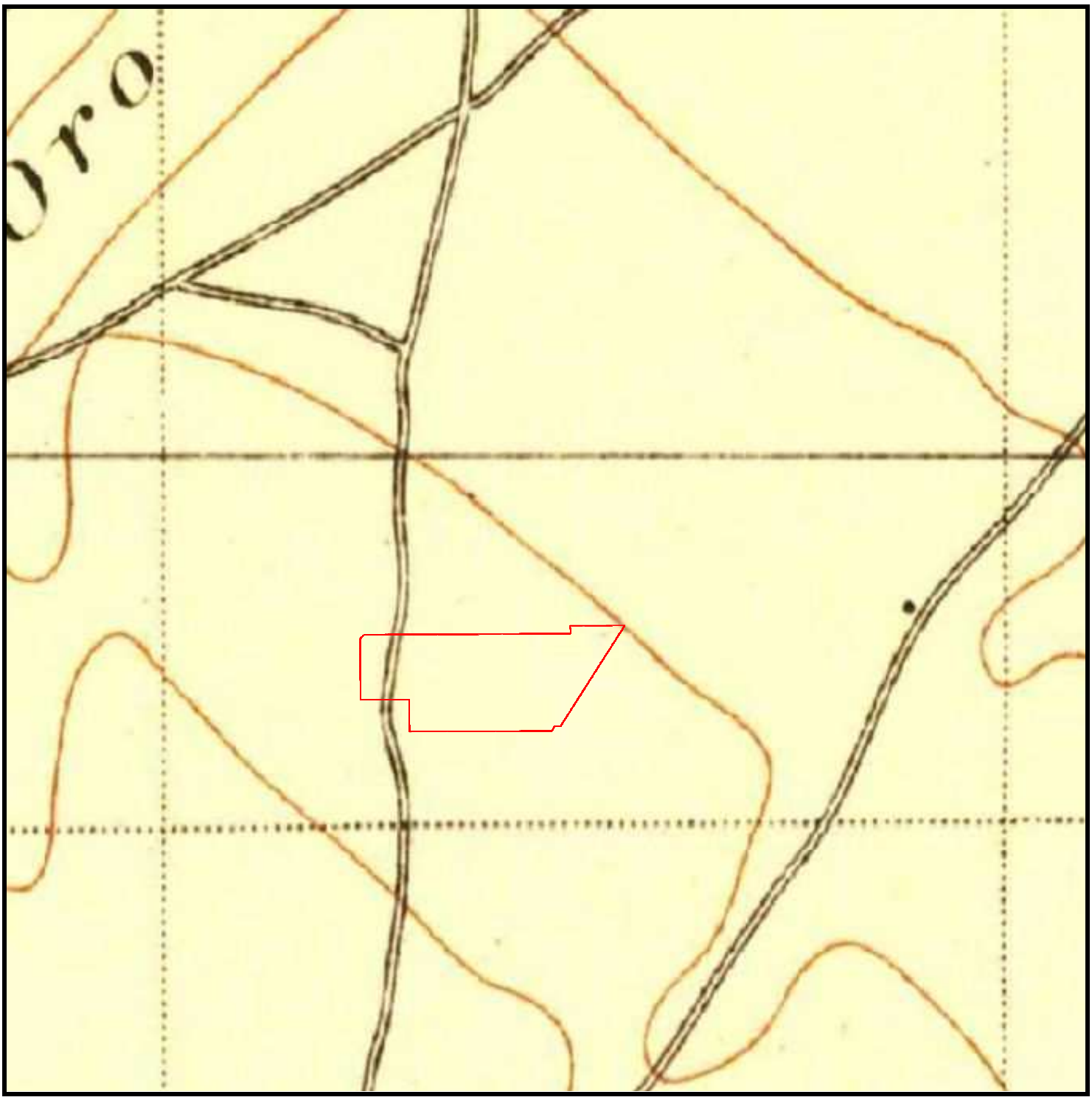

ENVIRONMENTAL RECORD SEARCH

Historical Topographic Map
Year 1912

N
W E
S

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356



Historical Topographic Map
Year 1906

**APNs 3064-591-17, -18, -12, and -13 and 3064-631-01**
**Hesperia, CA**

Target Site: 34.414918, -117.392313 Job #: 2104769356

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

# City Directory Research

REPORT RESULTS




## Report Results for:

Megan Black
UltraSystems Environmental Inc.
16431 Scientific Way
Irvine, CA 92618
2104769356 CDA
September 16, 2022

## Site Information:

Cargo Solutions-Truck Warehouse
APNs 3064-591-12, -13, 17, -18 and 3064-631-01
Hesperia, CA 92344

**Subject Site:**

*Client's Project #:* **7187**
*Address:* **APNs 3064-591-12, -13, 17, -18 and 3064-631-01**
*City, State Zip:* **Hesperia, CA 92344**

**ERS Order #:**

**2104769356 CDAC**

**Prepared For:**

*Name:* **Megan Black**
*Company:* **UltraSystems Environmental Inc.**
*Address:* **16431 Scientific Way**
*City, State Zip:* **Irvine, CA 92618**

**Date:**

**September 16, 2022**

**Prepared By:**

*Name:* **Michael Peel**
*Phone #:* **(714) 669-8096 Ext. 1002**

Thank you for selecting ***Environmental Record Search***! Enclosed are the results of our:

## City Directory Research

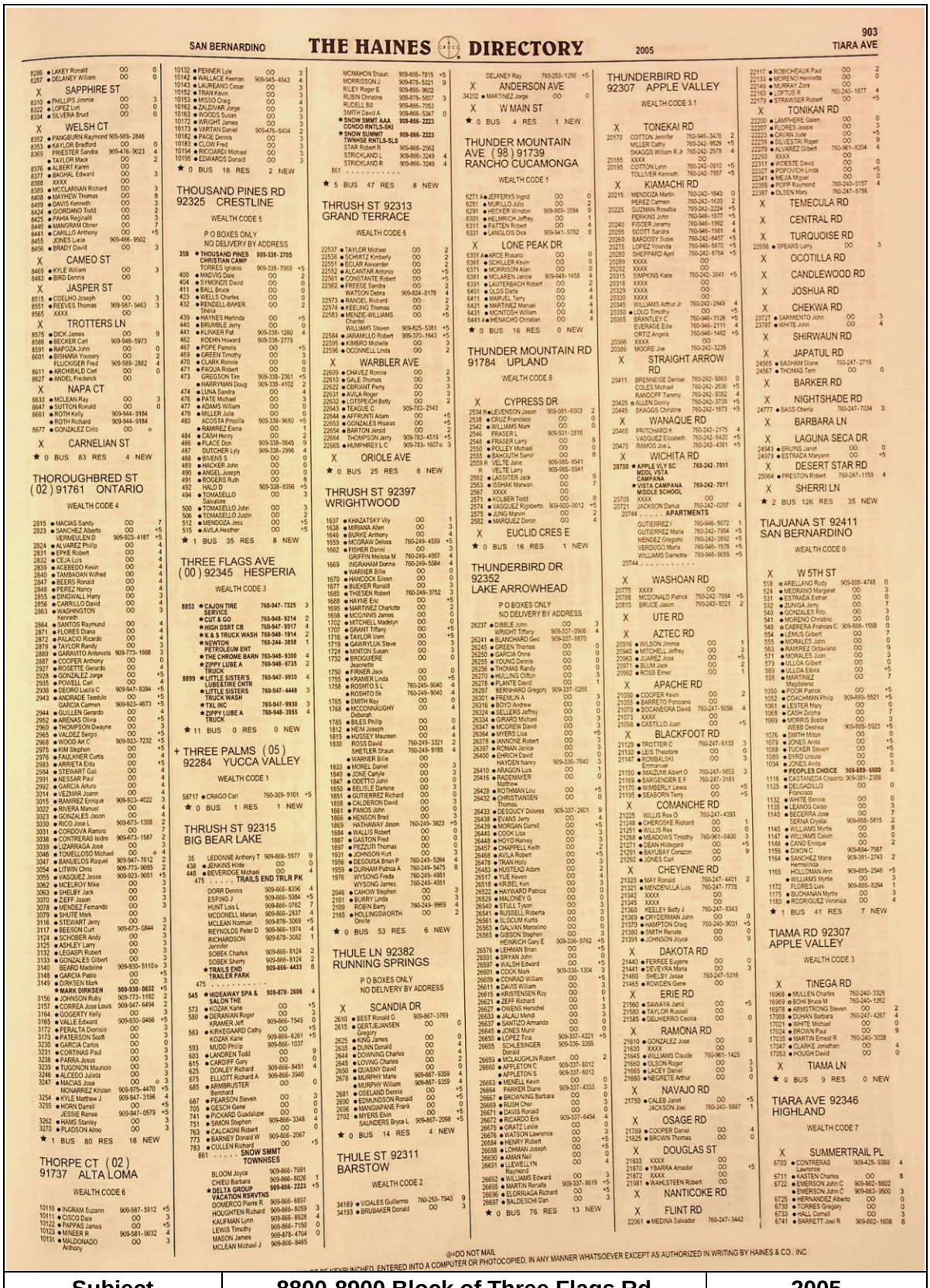
The attached image files and following table represent the findings of our research of the subject site and immediate adjacent sites.

| Years | Subject | Adjacent A |
|---|---|---|
| | **8800-8900 Block of Three Flags Rd** | **12200-12400 Block of Poplar St** |
| 2005 | ● | **R** |
| 2000 | ● | **R** |
| 1996 | **S** | **R** |
| 1990 | **S** | **R** |

● - Street & Range Listed **N/A** - Image Not Available **R** - Range Not Listed **S** - Street Not Listed

---

**ERS's** research has been limited to the information presented in the reviewed city directories only. All terms, conditions, and limitations normally associated with work contracted by **ERS** and presented or associated with the city directories are in effect at all times. This letter summary, all its information, and content have been derived from and rely upon the reviewed city directories. **ERS's** research has only been based on these books; **ERS** did not perform any type of independent investigation of any type, including as to the accuracy and/or completeness of the information derived or otherwise obtained from the secondary source or sources.



SAN BERNARDINO

# THE HAINES DIRECTORY

2005

903 TIARA AVE

8286 ● LAKEY Ronald OO 0
8287 ● DELANEY William OO 0

X SAPPHIRE ST

8310 ● PHILLIPS Jimmie OO 3
8322 ● LOPEZ Lori OO 0
8334 ● SILVERA Brud OO 0

X WELSH CT

8352 ● PANGBURN Raymond 909-569- 2846
8353 ● KAYLOR Bradford OO 0
8369 PRIESTER Sandra 909-476- 9023 4
● TAYLOR Mack OO 2
8376 ● ALBERT Karen OO
8377 ● BAGHAL Edward OO 3
8388 XXXX OO
8389 ● MCCLARNAN Richard OO 3
8408 ● MAYHEW Thomas OO 8
8409 ● DAVIS Kenneth OO 3
8424 ● GIORDANO Todd OO 2
8425 ● PAHIA Reginald OO 3
8440 ● MANGRAM Obner OO 7
8441 ● CARILLO Anthony OO +5
8455 JONES Lucie 909-466- 9502
8456 ● BRADY David OO 3

X CAMEO ST

8469 ● KYLE William OO 3
8483 ● BIRD Dennis OO

X JASPER ST

8515 ● COELHO Joseph OO 3
8551 ● REEVES Thomas 909-587- 5463 3
8565 XXXX OO

X TROTTERS LN

8575 ● DICK James OO 9
8586 ● BECKER Carl 909-948- 5973
8591 ● RAPOZA John OO 0
8601 ● BISHARA Youssry OO 2
FLUCKIGER Fred 909-589- 2882 4
8611 ● ARCHIBALD Carl OO 0
8627 ● ANDEL Frederick OO

X NAPA CT

8633 ● MCLEAN Ray OO 3
8647 ● SUTTON Ronald OO 0
8661 ● ROTH Kelly 909-944- 9184
● ROTH Richard 909-944- 9184
8677 ● GONZALEZ Celio OO

X CARNELIAN ST

★ 0 BUS 83 RES 4 NEW

## THOROUGHBRED ST (02) 91761 ONTARIO

WEALTH CODE 4

2815 ● MACIAS Sandy OO 7
2823 ● SANCHEZ Alberto OO +5
VERMEULEN D 909-923- 4187 +5
2824 ● ALVAREZ Philip OO 4
2831 ● EPKE Robert OO 4
2832 ● CEJA Luis OO 4
2839 ● ACEBEDO Kevin OO 4
2840 ● TAMBAOAN Wilfred OO 4
2847 ● BEERS Ronald OO 4
2848 ● PEREZ Nancy OO 4
2855 ● DINGWALL Harry OO 3
2856 ● CARRILLO David OO 4
2863 ● WASHINGTON Kenneth OO 3
2864 ● SANTOS Raymund OO 4
2871 ● FLORES Diana OO 4
2872 ● PALACIO Ricardo OO 3
2879 ● TAYLOR Randy OO 3
2880 ● GARAVITO Antonieta 909-773- 1988 3
2887 ● COOPER Anthony OO 0
2927 ● ROSETTE Gerardo OO 4
2928 ● GONZALEZ Jorge OO +5
2935 ● POWELL Carl OO 4
2936 ● DEORO Lucia C 909-947- 8394 +5
2943 ● ANDRADE Teodulo OO +5
GARCIA Carmen 909-923- 4673 +5
2944 ● GULLEN Gerardo OO 4
2952 ● ARENAS Olivia OO +5
2960 ● THOMPSON Dwayne OO 3
2965 ● VALDEZ Sergio OO 4
2968 ● WOOD Art C 909-923- 7232 +5
2975 ● KIM Stephen OO +5
2976 ● FAULKNER Curtis OO 4
2983 ● ARRIETA Elis OO +5
2984 ● STEWART Gail OO 4
2991 ● NESSAR Paul OO 4
2992 ● GARCIA Arturo OO 4
3014 ● VEZMAR Joann OO 4
3015 ● RAMIREZ Enrique 909-923- 4022 3
3022 ● RIVERA Manuel OO 4
3023 ● GONZALES Jason OO 4
3030 ● RICO Jose L 909-673- 1308 2
3031 ● CORDOVA Ramiro OO 7
3038 ● CONTRERAS Isidro 909-673- 1587 2
3039 ● LIZARRAGA Jose OO 3
3046 ● TOMELLOSO Michael OO + 4
3047 ● BANUELOS Raquel 909-947- 7612 2
3054 ● LITWIN Chris 909-773- 0085 2
3055 ● VASQUEZ Jesse 909-923- 9051 +5
3062 ● MCELROY Mike OO 3
3063 ● SHELBY Jack OO 3
3070 ● ZIEFF Jason OO 3
3078 ● MENDEZ Fernando OO 3
3079 ● SHUTE Mark OO 3
3116 ● STEWART Jerry OO 3
3117 ● BEESON Curt 909-673- 0844 2
3124 ● SCHOBER Andy OO 3
3125 ● ASHLEY Larry OO 3
3132 ● LEGASPI Robert OO 3
3133 ● GONZALES Gilbert OO 3
3140 BEARD Madeline 909-930- 5110 ● 3
3148 ● GARCIA Pablo OO +5
3149 ● DIRKSEN Mark OO 3
★ MARK DIRKSEN 909-930- 0632 +5
3156 ● JOHNSON Ruby 909-773- 1192 2
3157 ● CORREA Jose Louis 909-947- 6494 2
3164 ● GOGERTY Kelly OO 3
3165 ● VALLE Edward 909-930- 0466 +5
3172 ● PERALTA Dionisio OO 3
3173 ● PATERSON Scott OO 3
3230 ● GARCIA Carlos OO 0
3231 ● CORTINAS Paul OO 3
3238 ● PARRA Jesus OO 3
3239 ● TUGONON Mauricio OO 3
3246 ● ALCEDO Julieta OO 3
3247 ● MACIAS Jose OO ● 3
MONARREZ Kristen 909-975- 4470 +5
3254 ● KYLE Matthew J 909-947- 3196 4
3255 ● HORN Darrell OO +5
JESSIE Renee 909-947- 0579 +5
3262 ● HAMS Stanley OO 3
3270 ● PLADSON Almo OO 3
★ 1 BUS 80 RES 18 NEW

## THORPE CT (02) 91737 ALTA LOMA

WEALTH CODE 6

10110 ● INGRAM Suzann 909-987- 5912 +5
10111 ● CISCO Dais OO 3
10122 ● PAPPAS James OO +5
10123 ● MINEER R 909-581- 0032 4
10131 ● MALDONADO Anthony OO 3

10132 ● PENNER Lyle OO 3
10142 ● WALLACE Keenan 909-945- 4943 4
10143 ● LAUREANO Cesar OO 3
10152 ● TRAN Kevin OO 3
10153 ● MISSO Craig OO 4
10162 ● ZALDIVAR Jorge OO 3
10163 ● WOODS Susan OO 3
10172 ● WRIGHT James OO 3
10173 ● VARTAN Daniel 909-476- 6404 2
10182 ● PAGE Dennis OO 3
10183 ● CLOW Fred OO 3
10194 ● RICCIARDI Michael OO 3
10195 ● EDWARDS Donald OO 3
★ 0 BUS 18 RES 2 NEW

## THOUSAND PINES RD 92325 CRESTLINE

WEALTH CODE 5

P O BOXES ONLY
NO DELIVERY BY ADDRESS

359 ★THOUSAND PINES CHRISTIAN CAMP 909-338- 2705
TORRES Ignacio 909-338- 7969 +5
490 ● MADVIG Dale OO 2
404 ● SYMONDS David OO 0
411 ● BALL Bruce OO 0
423 ● WELLS Charles OO 0
432 ● RENDELL-BAKER Sheila OO 2
439 ● HAYNES Herlinda OO +5
440 ● BRUMBLE Jerry OO 0
441 ● KLINKER Pat 909-338- 1280 4
462 KOEHN Howard 909-338- 2779
467 ● POPE Pamela OO +5
469 ● GREEN Timothy OO 3
470 ● CLARK Ronnie OO 0
471 ● PAQUA Robert OO 0
473 GREGSON Tim 909-338- 2361 +5
● HARRYMAN Doug 909-338- 4102 2
474 ● LUNA Sandra OO 4
476 ● PATE Michael OO 3
477 ● ADAMS William OO 0
479 ● MILLER Julie OO 0
480 ACOSTA Priscilla 909-338- 9680 +5
● RAMIREZ Elena OO 4
484 ● CASH Henry OO 2
486 ● PLACE Don 909-338- 0645 9
487 DUTCHER Lyly 909-338- 2996 4
488 ● BIVENS S OO 0
489 ● HACKER John OO 0
490 ● ANGEL Joseph OO 0
491 ● ROGERS Ruth OO 8
492 HALD B 909-338- 6996 +5
494 ● TOMASELLO Salvatore OO 3
500 ● TOMASELLO John OO 3
506 ● TOMASELLO Justin OO 2
512 ● MENDOZA Jess OO +5
515 ● AVILA Heather OO +5
★ 1 BUS 35 RES 8 NEW

## THREE FLAGS AVE (00) 92345 HESPERIA

WEALTH CODE 3

8853 ★CAJON TIRE SERVICE 760-947- 7325 3
★CUT & GO 760-948- 9214 2
★HIGH DSRT CB 760-947- 9917 4
★K & S TRUCK WASH 760-948- 1914 2
★NEWTON PETROLEUM ENT 760-244- 3858 1
★THE CHROME BARN 760-948- 9300 4
★ZIPPY LUBE A TRUCK 760-948- 6735 2
8899 ★LITTLE SISTER'S LUBE&TIRE CNTR 760-947- 9930 4
★LITTLE SISTERS TRUCK WASH 760-947- 4448 3
★TXL INC 760-947- 9930 3
★ZIPPY LUBE A TRUCK 760-948- 3955 4
★ 11 BUS 0 RES 0 NEW

## + THREE PALMS (05) 92284 YUCCA VALLEY

WEALTH CODE 1

58717 ● CRAGO Carl 760-369- 9101 +5
★ 0 BUS 1 RES 1 NEW

## THRUSH ST 92315 BIG BEAR LAKE

35 LEDONNE Anthony T 909-866- 5977 9
438 ● JENKINS Hilde OO 0
448 ● BEVERIDGE Michael OO 4
475 . . . . . TRAILS END TRLR PK
DORR Dennis 909-866- 8396 4
ESPINO J 909-866- 5984 +5
HUNT Lois L 909-866- 5762 7
MCDONELL Marian 909-866- 2837 4
MCLEAN Norman 909-878- 3069 +5
REYNOLDS Peter D 909-866- 1974 4
RICHARDSON Jennifer 909-878- 3082 1
SOBEK Charles 909-866- 8124 2
SOBEK Sherry 909-866- 8124 2
★TRAILS END TRAILER PARK 909-866- 4433 8
475 . . . . . .
545 ★HIDEAWAY SPA & SALON THE 909-878- 2606 4
573 ● KOZAK Kane OO +5
580 ● GORDAN Roger OO 3
KRAMER Jeff 909-866- 7549 0
583 ● KIRKEGAARD Cathy OO +5
KOZAK Kane 909-866- 6261 +5
KOZAK Mudd Philip 909-866- 1037
593 ● LANDREN Todd OO 9
603 ● CARDIFF Gary OO 4
615 ● DONLEY Richard 909-866- 8451 4
625 ELLIOTT Richard A 909-866- 3940 0
675 ● ARMBRUSTER Bernhard OO 0
685 ● PEARSON Steven OO 3
687 ● GESCH Gene OO 0
705 ● PICKARD Guadalupe OO 3
741 SIMON Stephen 909-866- 3348 4
751 ● CALCAGNI Robert OO 0
763 ● BARNEY Donald W 909-866- 2067 +5
773 ● CULLEN Richard OO +5
783 ● SNOW SMMT TOWNHSES
861 . . . . . .
BLOOM Joyce 909-866- 7991
CHEU Barbara 909-866- 6026 1
★DELTA GROUP VACATION RSRVTNS 909-866- 2223 +5
DOMERCQ Pierre R 909-866- 6897
HOUGHTEN Richard 909-866- 8059 3
KAUFMAN Lynn 909-866- 8928 4
LEWIS Timothy 909-866- 7150 0
MASON James 909-878- 4704 0
MCLEAN Michael J 909-866- 8485

MCMAHON Shaun 909-866- 7815 +5
MORRISSON J 909-878- 5321 9
RILEY Roger E 909-866- 9602
RUBIN Christine 909-878- 5807 3
RUDELL Bill 909-866- 7053
SMITH David A 909-866- 5347 0
★SNOW SMMT AAA CONDO RNTLS-SLV 909-866- 2223
★SNOW SUMMIT TWNHSE RNTLS-SLS 909-866- 2223
STAR Robert R 909-866- 2562
STRICKLAND L 909-866- 3249 4
STRICKLAND R 909-866- 3249 4
861 . . . . . .
★ 5 BUS 47 RES 8 NEW

## THRUSH ST 92313 GRAND TERRACE

WEALTH CODE 6

22537 ● TAYLOR Michael OO 2
22538 ● SCHMITZ Kimberly OO 2
22551 ● ECLAR Alexander OO 2
22552 ● ALCANTAR Antonio OO +5
22561 ● CONSTANTE Robert OO +5
22562 ● FREESE Sandra OO 2
WATSON Debra 909-824- 0178 4
22573 ● RANGEL Richard OO 2
22574 ● KEELING Thomas OO 2
22583 ● MENZIE-WILLIAMS Chantel OO 4
WILLIAMS Steven 909-825- 5381 +5
22584 ● JARAMILLO Robert 909-370- 1643 +5
22595 ● KIMBO Michelle OO 3
22596 ● OCONNELL Linda OO 2

X WARBLER AVE

22609 ● CHAVEZ Ronnie OO 2
22610 ● GALE Thomas OO 3
22622 ● OGRANT Perry OO 3
22631 ● AVILA Roger OO 3
22632 ● LOTSPEICH Betty OO 2
22643 ● TEAGUE C 909-783- 2143
22644 ● AFFRUNTI Adam OO +5
22653 ● GONZALES Hisaias OO +5
22654 ● BARTON Jarod OO 2
22664 THOMPSON Jerry 909-783- 4519 +5
22665 ● HUMPHREY L C 909-783- 1607 ● 3

X ORIOLE AVE

★ 0 BUS 25 RES 8 NEW

## THRUSH ST 92397 WRIGHTWOOD

1637 ● KHAZATSKY Vlly OO 1
1638 ● MRIANA Allen OO 3
1646 ● BURKE Anthony OO 4
1659 ● MCGRAW Deloss 760-249- 4599 +5
1662 ● FISHER Daniel OO 3
GRIFFIN Melissa M 760-249- 4957 4
1669 INGRAHAM Donna 760-249- 5584 4
● HARNER Billie OO 0
1670 ● HANCOCK Eileen OO 0
1677 ● BUEKER Ronald OO 3
1685 ● THIESEN Robert 760-249- 3752 0
1688 ● HAYNE Eric OO +5
1695 ● MARTINEZ Charlotte OO 2
1698 ● MCGINNIS James OO 0
1702 ● MITCHELL Madelyn OO 0
1707 ● GRANT Tiffany OO +5
1716 ● TAYLOR Vern OO 3
1719 ● GAWRYLUK Steve OO 3
1724 ● MINTON Susan OO 3
1812 ● BROGUERE Jeannette OO 0
1750 ● FIRNER Jack OO 0
1755 ● KRAMER Linda OO +5
1758 ● ROSHTO S L 760-249- 9040 4
● ROSHTO Sk 760-249- 9040 4
1765 ● SMITH Roy OO 0
1768 ● MCCONNAUGHY Deborah OO 4
1785 ● BILES Philip OO 0
1812 ● HEIM Joseph OO 4
1815 ● HUSSEY Maureen OO 4
1830 ● ROSS David 760-249- 3321 2
SHELTER Shaun 760-249- 9185 4
● WARNER Billie OO 0
1833 ● MOREL Daniel OO 3
1840 ● JONE Carlyle OO 3
1847 ● ODETTO John OO 0
1850 ● GIELLE Darlene OO 3
1851 ● GUTIERREZ Richard OO 0
1858 ● CALDERON David OO 3
1861 ● PANOS John OO 0
1866 ● HENSON Brad OO 3
1869 HATHAWAY Jason 760-249- 3823 +5
1884 ● WALLIS Robert OO 0
1887 ● GASTON Fred OO 0
1897 ● PEZZUTI Thomas OO 0
1931 ● JOHNSON Kurt OO 0
1956 ● DESOUSA Brian P 760-249- 5264 4
1959 ● DURHAM Patricia A 760-249- 5475 8
1976 WYSONG Freda 760-249- 4951
WYSONG James 760-249- 4951
2046 ● CAHOW Stephen OO 3
2101 ● BURRY Linda OO 3
2109 ROBIN Barry 760-249- 9969 4
2165 ● HOLLINGSWORTH Orville OO 2
★ 0 BUS 53 RES 6 NEW

## THULE LN 92382 RUNNING SPRINGS

P O BOXES ONLY
NO DELIVERY BY ADDRESS

X SCANDIA DR

2610 ● BEST Ronald G 909-867- 3769
2615 ● GERTJEJANSEN Gregory OO 0
2625 ● KING James OO 4
2635 ● DUNN Donald OO 4
2644 ● DOWNING Charles OO 2
2645 ● LOVING Charles OO 0
2650 ● QUIADVI David OO 4
2678 ● MURPHY Marie 909-867- 9359 4
● MURPHY William 909-867- 9359 4
2681 ● OSELAND Dennis OO +5
2690 ● EDMUNDSON Ronald OO +5
2696 ● MANGIAPANE Frank OO 0
2702 ● MYERS Erwin 909-867- 2098 +5
SAUNDERS Bryce L 909-867- 2098 +5
★ 0 BUS 14 RES 4 NEW

## THULE ST 92311 BARSTOW

WEALTH CODE 2

34189 ● VIDALES Guillermo 760-253- 7940 9
34193 ● BRUBAKER Donald OO 3

DELANEY Ray 760-253- 1256 +5

X ANDERSON AVE

34202 ● MARTINEZ Jorge OO 0

X W MAIN ST

★ 0 BUS 4 RES 1 NEW

## THUNDER MOUNTAIN AVE (98) 91739 RANCHO CUCAMONGA

WEALTH CODE 1

6271 A● JEFFERYS Ingrid OO 0
6281 ● MURILLO Julio OO 2
6291 ● HECKER Winston 909-983- 3584 9
6301 ● HELMRICH Jeffrey OO 1
6311 ● FATTEN Robert OO 4
6331 ● JANGLOIS Dick 909-941- 5782 8

X LONE PEAK DR

6351 A● ARCE Rosario OO 0
6361 ● SCHILLER Kevin OO 0
6371 ● MORRISON Alan OO 0
6381 ● MCLAREN Janice 909-945- 1458 4
6391 ● LAUTERBACH Robert OO 2
6401 ● OLDS Daria OO 4
6411 ● MARVEL Terry OO 4
6421 ● MARTINEZ Manuel OO 4
6431 ● MCNTOSH William OO 4
6441 A● MENACHO Christian OO 4
★ 0 BUS 16 RES 0 NEW

## THUNDER MOUNTAIN RD 91784 UPLAND

WEALTH CODE 8

X CYPRESS DR

2534 R● LEVENSON Jason 909-981- 6003 2
2538 ● CRUZ Francisco OO 0
2542 ● WILLIAMS Mark OO 0
2546 FRASER L 909-931- 2816
2548 ● FRASER Larry OO 8
2550 ● POLLEY Michael OO 8
2555 ● BAHOUTH Samir OO 8
2559 R VELTE Jane 909-985- 8941
VELTE Larry 909-985- 8941
2562 ● LASSITER Jack OO 9
2563 ● SSHAK Marwan OO 7
2567 XXXX OO
2571 ● KOLBER Todd OO 8
2574 ● VASQUEZ Rogberto 909-920- 0012 +5
2575 ● JUNG Marvin OO 2
2582 ● MARQUEZ Doron OO 4

X EUCLID CRES E

★ 0 BUS 16 RES 1 NEW

## THUNDERBIRD DR 92352 LAKE ARROWHEAD

P O BOXES ONLY
NO DELIVERY BY ADDRESS

26237 ● DIBBLE John OO 3
WRIGHT Tiffany 909-337- 0906 4
26241 ● BLANCHARD Geo 909-337- 8870 +5
26245 ● GREEN Thomas OO 0
26250 ● GARCIA Onne OO 0
26255 ● YOUNG Dennis OO 0
26256 ● THOMAS Randy OO 0
26270 ● HULLING Clifton OO 3
26278 ● PLANTE David OO 1
26297 BERNHARD Gregory 909-337- 0268 +5
26301 ● FREMLIN A OO 3
26316 ● BOYD Andrew OO 0
26324 ● SELLERS Jeffrey OO 0
26334 ● GIRARD Michael OO 3
26347 ● MCGREW David OO 3
26364 ● MYERS Lisa OO +5
26378 ● JANNONE Robert OO 3
26397 ● ROMAN Janice OO 3
26400 ● EHRICH David OO 3
HAYDEN Nancy 909-336- 7640 3
26410 ● ARAGON Luis OO 1
26416 ● RADEMAKER Matthew OO +5
26428 ● ROTHMAN Lou OO 0
26432 ● CHRISTIANSEN Thomas OO 0
26433 ● DESOUCY Dolores 909-337- 2601 9
26438 ● EVANS Jerry OO 4
26439 ● MORGAN Darrell OO +5
26445 ● COOK Lisa OO 3
26448 ● HOYO Harvey OO 2
26457 ● CHAPPELL Keith OO 2
26468 ● AVILA Robert OO +5
26478 ● DEAN Holly OO 3
26483 ● HUSTEAD Adam OO 2
26517 ● YUE Keven OO 4
26518 ● KUBEL Kim OO 3
26522 ● HAYWARD Patricia OO 0
26529 ● MALONEY G OO 0
26543 ● STULL Tyson OO 3
26541 ● RUSSELL Roberta OO 3
26561 ● SLOCUM Kurtis OO 0
26563 ● GALVAN Marcelino OO 0
26565 ● GIBSON Stephen HEINRICH Gary E OO 3
909-336- 9762 +5
26576 ● LEHMAN Brian OO +5
26591 ● BRYAN John OO 0
26597 ● WALSH Edward OO +5
26601 ● COOK Mark 909-336- 1304 3
26609 ● CONRAD William OO +5
26611 ● DAVIS William OO 3
26615 ● KRISTENSEN Roy OO 0
26621 ● ZEFF Richard OO 1
26627 ● OWENS Herschel OO 3
26633 ● ALALI Mindi OO 0
26637 ● SANTIZO Armando OO 0
26645 ● JONES Munir OO 0
26650 ● LOPEZ Tina 909-337- 4221 +5
SCHLESINGER Donald 909-336- 3355 +5
26659 ● MCLAUGHLIN Robert OO 2
26660 ● APPLETON C 909-337- 6012
● APPLETON S 909-337- 6012
26663 ● MENELL Kevin OO 0
26664 PARKER Diane 909-337- 4333 0
26667 ● BROWNING Barbara OO 0
26669 ● RUSH Cher OO 0
26671 ● DAVIS Ronald OO 0
26672 ● RICARDO Erik 909-337- 6454 4
26675 ● GRATZ Leslie OO 0
26676 ● WATSON Lawrence OO 3
26684 ● HENRY Robert OO +5
26688 ● LOHMAN Joseph OO 0
26690 ● AMAN Neil OO 4
26691 ● LLEWELLYN Raymond OO 3
26692 ● WILLIAMS Edward OO +5
26695 ● MARTIN Renalte 909-337- 8619 +5
26696 ● ELORRIAGA Richard OO 3
26697 ● BALDESCHI Dan OO
★ 0 BUS 76 RES 13 NEW

## THUNDERBIRD RD 92307 APPLE VALLEY

WEALTH CODE 3.1

X TONEKAI RD

20170 COTTON Jennifer 760-946- 3478 2
MILLER Cathy 760-242- 9529 +5
SKAGGS William R Jr 760-242- 2978 4
20185 XXXX OO
20195 COTTON Lynn 760-242- 0910 +5
TOLLVER Kenneth 760-242- 7857 +5

X KIAMACHI RD

20215 MENDOZA Martin 760-242- 1643 0
PEREZ Carmen 760-242- 1620 2
20225 GUZMAN Rosalba 760-242- 2224 +5
PERKINS John 760-946- 1877 +5
20249 FISCER Jeramy 760-946- 1962 4
20255 SCOTT Sandra 760-946- 1981 4
20263 BARDOSY Susie 760-242- 6457 +5
20275 LOPEZ Yolanda 760-946- 5870 +5
20283 SHEPPARD April 760-242- 6764 +5
20289 XXXX OO
20293 XXXX OO
20315 SIMPKINS Kate 760-242- 3041 +5
20318 XXXX OO
20329 XXXX OO
20339 XXXX OO
20345 WILLIAMS Arthur Jr 760-242- 2849 4
20350 ● LOUD Timothy OO +5
20355 BRANTLEY C 760-946- 3126 +5
EVERAGE Edie 760-946- 2111 4
ORTIZ Angela 760-946- 1482 +5
20366 XXXX OO
20386 MOORE Joe 760-242- 3235

X STRAIGHT ARROW RD

20411 BRENNEISE Denise 760-242- 5063 0
COLES Michael 760-242- 2636 +5
RANDOFF Tammy 760-242- 9352 4
20425 ● ALLEN Donny 760-242- 3739 +5
20445 SKAGGS Christine 760-242- 1873 +5

X WANAQUE RD

25465 PRITCHARD K 760-242- 2175 4
VASQUEZ Elizabeth 760-242- 6420 +5
20475 RAMOS Joe L 760-242- 4361 +5

X WICHITA RD

20700 ★APPLE VLY SC MDDL VSTA CAMPANA 760-242- 7011
★VISTA CAMPANA MIDDLE SCHOOL 760-242- 7011
20705 XXXX OO
20721 JACKSON Darius 760-242- 0207 4
20744 . . . . . APARTMENTS
GUTIERREZ I 760-946- 5072 1
GUTIERREZ Maria 760-242- 7994 +5
MENDEZ Gregorio 760-242- 3992 +5
VERDUGO Maria 760-946- 1578 +5
WILLIAMS Darnette 760-946- 9055 +5
20744 . . . . . .

X WASHOAN RD

20775 XXXX OO
20788 MCDONALD Patrick 760-242- 7684 +5
20810 BRUCE Jason 760-242- 8321 2

X UTE RD

20916 ● WILSON Jimmie OO 1
20940 ● MITCHELL Jeffrey OO 3
20963 ● RAMEZ Jose OO +5
20971 ● BLUM Jack OO 2
20992 ● ROSS Elmer OO 1

X APACHE RD

21050 ● COOPER Kevin OO 2
21055 ● ESTRADO Porociano OO 0
21070 ● BOCANEGRA David 760-247- 5056 4
21073 XXXX OO
21098 ● CASTILLO Juan OO +5

X BLACKFOOT RD

21129 ● TROTTER C 760-247- 6133 3
21130 ● LEIS Theodore OO 0
21147 ● ROMBALSKI Jeffrey OO 3
21150 ● IMAIZUMI Albert O 760-247- 9853 3
21169 ● BARGENDER E F 760-247- 3161
21170 ● WIMBERLY Lewis OO +5
21195 ● SEABORN Terry OO +5

X COMANCHE RD

21225 WILLIS Rex O 760-247- 4393
21248 ● CHEROSKE Richard OO 1
21251 ● WILLIS Rex OO 0
21268 ● MEADOWS Timothy 760-961- 0400 3
21271 ● DEAN Hildegard OO +5
21284 ● JAYUKAY Corazon OO 9
21292 ● JONES Carl OO

X CHEYENNE RD

21320 ● MAY Ronald 760-247- 4401 2
21321 ● MENDENILLA Luis 760-247- 7778
21345 XXXX OO
21360 KEELEY Betty J 760-247- 8343
21369 ● CRYDERMAN John OO 0
21370 ● HAMPTON Craig 760-240- 9031 +5
21380 ● SMITH Renate OO 0
21391 ● JOHNSON Joyce OO 9

X DAKOTA RD

21440 ● FERREE Eugene OO 0
21441 ● DEVEYRA Maria OO 3
21460 SHELBY Jesse 760-247- 5316
21465 ● ROWDEN Gene OO

X ERIE RD

21560 ● SAWAYA Jamil OO +5
21580 ● TAYLOR Russell OO 0
21585 ● DELHIERRO Cecilia OO

X RAMONA RD

21610 ● GONZALEZ Jose OO 0
21639 XXXX OO
21645 ● WILLIAMS Claude 760-961- 1425
21660 ● OLSON Roger OO 3
21665 ● LACEY Daniel OO 3
21680 ● NEGRETE Arthur OO 0

X NAVAJO RD

21750 ● CALEB Janet OO
JACKSON Joel 760-240- 5887 1

X OSAGE RD

21789 ● COOPER Daniel OO 4
21825 ● BROWN Thomas OO 0

X DOUGLAS ST

21833 XXXX OO
21870 ● YBARRA Amador OO +5
21872 XXXX OO
21981 ● WAHLSTEEN Robert OO

X NANTICOKE RD

X FLINT RD

22061 ● MEDINA Salvador 760-247- 3442

22117 ● ROBICHEAUX Paul OO 2
22133 ● MORENO Henrietta OO 0
22149 ● MURRAY Zora OO
22163 ● LOFTUS R 760-240- 1877 4
22179 ● STRAWSER Robert OO +5

X TONIKAN RD

22200 ● LAMPHERE Galen OO 0
22207 ● FLORES Jessie OO 3
22223 ● CAVAN Jude OO +5
22239 ● SILVESTRI Roger OO 9
22275 ● ALVAREZ Gilbert 760-961- 8204 4
22293 XXXX OO
22311 ● WOESTE David OO +5
22327 ● POPOVICH Linda OO 4
22341 ● MEJIA Miguel OO 0
22355 ● POPP Raymond 760-240- 0157 4
22387 ● OLSEN Mary 760-247- 5786

X TEMECULA RD

X CENTRAL RD

X TURQUOISE RD

22656 ● SPEARS Larry OO 3

X OCOTILLA RD

X CANDLEWOOD RD

X JOSHUA RD

X CHEKWA RD

23727 ● SARMIENTO John OO 3
23787 ● WHITE John OO 4

X SHIRWAUN RD

X JAPATUL RD

24565 ● BASHAM Diane 760-247- 2719
24567 ● THOMAS Terri OO 0

X BARKER RD

X NIGHTSHADE RD

24777 ● BASS Oberia 760-247- 7034 3

X BARBARA LN

X LAGUNA SECA DR

24943 ● BRUNS Janet OO 0
24979 ● ESTRADA Maryann OO +5

X DESERT STAR RD

25064 ● PRESTON Robert 760-247- 1159 4

X SHERRI LN

★ 2 BUS 126 RES 35 NEW

## TIAJUANA ST 92411 SAN BERNARDINO

WEALTH CODE 0

X W 5TH ST

518 ● ARELLANO Rudy 909-888- 4748 0
524 ● MEDRANO Margaret OO 3
531 ● ESTRADA Esther OO 0
532 ● ZUNIGA Jerry OO 7
540 ● GONZALES Rito OO 3
541 ● MORENO Christino OO 0
548 ● CABRERA Frances C 909-888- 1558 0
554 ● LEMUS Daniel OO 7
555 ● MORALES John OO 0
563 ● RAMIREZ Octaviano OO 9
571 ● MORALES Juan OO 3
579 ● ULLOA Gilbert OO 0
589 ● ULLOA Elbira OO +5
595 MARTINEZ OO 7
1050 ● POOR Patrick OO +5
1052 ● COACHMAN Philip 909-889- 5521 +5
1061 ● LESTER Mary OO 7
1069 ● CASH Zeisha OO 7
1069 ● MORRIS Bobbie WEBB Deshea 909-885- 5923 +5
1076 ● SMITH Milton OO 0
1077 ● JONES Anita OO +5
1088 ● TUCKER Steven OO +5
1089 ● BYRD Ursula OO 0
1094 ● JONES Anita OO 3
★ PEOPLES CHOICE 909-889- 6600 4
1115 ● CASTANEDA Crisanto 909-381- 2369
1125 ● DELGADILLO Francisco OO 0
1132 ● WHITE Bennie OO 0
1135 ● LEANOS Celso OO 3
1140 ● BECERRA Jose OO 7
SIERRA Cristal 909-885- 5815 2
1145 ● WILLIAMS Myrtle OO 8
1147 ● WILLIAMS Calvin OO 0
1148 ● CANO Enrique OO 2
1156 ● DIXON C 909-884- 7987
1164 ● SANCHEZ Maria Hermenia 909-381- 2743 2
1165 HOLLOMAN Ann 909-885- 2546 +5
● WILLIAMS Myrtle OO 3
1172 ● FLORES Luis 909-885- 8254 1
1175 ● BUCHANAN Myrtle OO 3
1183 ● RODRIGUEZ Veronica OO 4
★ 1 BUS 41 RES 7 NEW

## TIAMA RD 92307 APPLE VALLEY

WEALTH CODE 3

X TINEGA RD

16968 ● MULLEN Charles 760-240- 3326
16969 ● BOHI Bruce M 760-240- 1262
16978 ● ARMSTRONG Steven OO 2
17008 ● DUHAN Barbara 760-247- 4267 4
17021 ● WHITE Michael OO 0
17024 ● BROWN Paul OO 9
17035 ● MARTIN Ernest R 760-240- 3038
17047 ● CLARKE Jonathan OO 4
17053 ● HOUGH David OO 0

X TIAMA LN

★ 0 BUS 9 RES 0 NEW

## TIARA AVE 92346 HIGHLAND

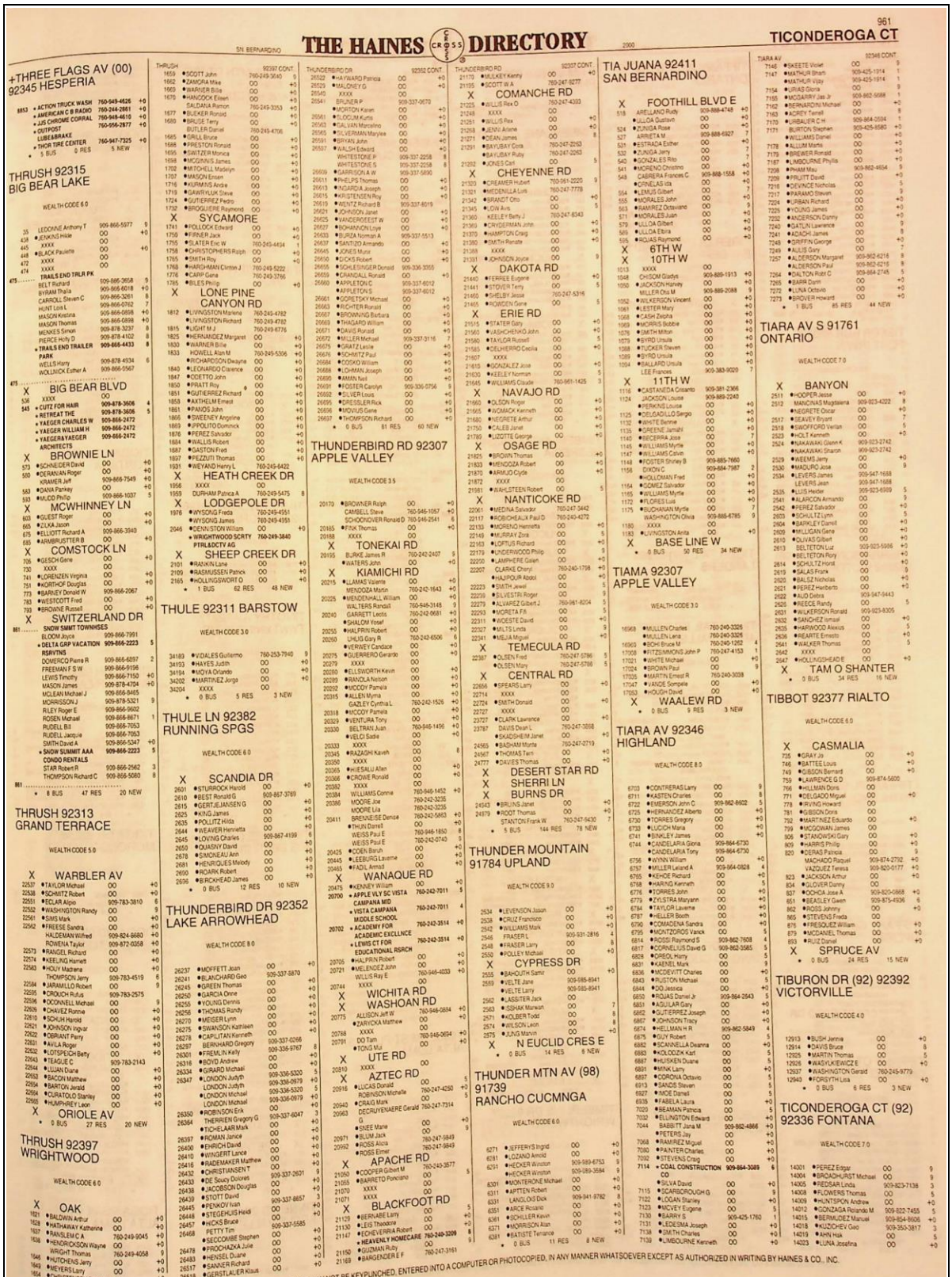
WEALTH CODE 7

X SUMMERTRAIL PL

6703 ● CONTRERAS Lawrence 909-425- 9360 4
6711 ● KASTEN Charles OO 8
6722 ● EMERSON John C 909-862- 8602
● EMERSON John C 909-863- 9500 3
6725 ● HERNANDEZ Alberto OO 0
6730 ● TORRES Gregory OO 0
6733 ● HALL Cornell OO 3
6741 ● BARRETT Joel R 909-862- 1698 8

®=DO NOT MAIL
...OT BE KEYPUNCHED, ENTERED INTO A COMPUTER OR PHOTOCOPIED, IN ANY MANNER WHATSOEVER EXCEPT AS AUTHORIZED IN WRITING BY HAINES & CO., INC.

| Subject | 8800-8900 Block of Three Flags Rd | 2005 |
|---|---|---|



THE HAINES DIRECTORY

961
TICONDEROGA CT

+THREE FLAGS AV (00)
92345 HESPERIA

8853 • ACTION TRUCK WASH 760-949-4626 +0
• AMERICAN C B RADIO 760-244-2661 +0
• JJS CHROME CORRAL 760-949-4610 +0
• OUTPOST 760-956-2877 +0
LUBE&BRAKE
• THOR TIRE CENTER 760-947-7325 +0
5 BUS 0 RES 5 NEW

THRUSH 92315
BIG BEAR LAKE

WEALTH CODE 6 0

35 LEDONNE Anthony T 909-866-5977 9
439 • JENKINS Hilde OO +0
445 XXXX OO
448 • BLACK Paulette OO +0
472 XXXX OO
474 XXXX
475 TRAILS END TRLR PK
BELT Richard 909-866-3658 9
BYRAM Thalia 909-866-6018 +0
CARROLL Steven C 909-866-3261 8
HUNT Lois L 909-866-0762 7
MASON Kristina 909-866-0898 +0
MASON Thomas 909-866-0898 +0
MENKES Simon 909-878-3237 8
PIERCE Holly D 909-878-4102 8
• TRAILS END TRAILER PARK 909-866-4433 8
WELLS Harry 909-878-4934 6
WOLINICK Esther A 909-866-0567

475 X BIG BEAR BLVD
536 XXXX OO
545 • CUTZ FOR HAIR 909-878-3606 4
• RETREAT THE 909-878-3606 5
• YAEGER CHARLES W 909-866-2472
• YAEGER WILLIAM H 909-866-2472
• YAEGER&YAEGER ARCHITECTS 909-866-2472
X BROWNIE LN
573 • SCHNEIDER David OO +0
580 • DERAVIAN Roger OO +0
KRAMER Jeff 909-866-7549 +0
583 • DANA Pankey OO +0
593 • MUDD Phillip 909-866-1037 5
X MCWHINNEY LN
603 • GUEST Roger OO +0
665 • ZUKA Jason OO +0
675 • ELLIOTT Richard A 909-866-3940 +0
680 • ARMBRUSTER B OO +0
X COMSTOCK LN
709 • GESCH Gene OO +0
730 XXXX OO
741 • LORENZEN Virginia OO +0
751 • NORTHOF Douglas OO +0
773 • BARKEY Donald W 909-866-2067 +0
783 • WESTCOTT Fred OO +0
793 • BROWNE Russell OO +0
X SWITZERLAND DR
801 SNOW SMMT TOWNHSES
BLOOM Joyce 909-866-7991
• DELTA GRP VACATION RSRVTNS 909-866-2223 5
DOMERCO Pierre R 909-866-6097 2
FREEMAN F S W 909-866-9196
LEWIS Timothy 909-866-7150 +0
MASON James 909-878-4704 +0
MCLEAN Michael J 909-866-8465
MORRISSON J 909-878-5321 9
RILEY Roger E 909-866-0602
ROSEN Michael 909-866-8671 1
RUDELL Bill 909-866-7053
RUDELL Jacquie 909-866-7053
SMITH David A 909-866-5347 +0
• SNOW SUMMIT AAA CONDO RENTALS 909-866-2223 5
STAR Robert R 909-866-2562 3
THOMPSON Richard C 909-866-5080 8
801 • 8 BUS 47 RES 20 NEW

THRUSH 92313
GRAND TERRACE

WEALTH CODE 5 0

X WARBLER AV
22537 • TAYLOR Michael OO +0
22538 • SCHMITZ Robert OO +0
22551 • ECLAR Alpio 909-783-3810 6
22552 • WASHINGTON Randy OO 9
22561 • SIMS Mark OO +0
22562 • FREESE Sandra OO +0
HALDEMAN Wilfred 909-824-8680 +0
ROWENA Taylor 909-873-0358 +0
22573 • RANGEL Richard OO +0
22574 • KEILING Harriett OO +0
22583 • HOUY Madrene OO +0
THOMPSON Jerry 909-783-4519 6
22584 • JARAMILLO Robert OO 9
22595 • CROUCH Rufus 909-783-2575
22596 • OCONNELL Michael OO 9
22626 • CHAVEZ Ronnie OO +0
22619 • SCHUH Harold OO +0
22621 • CARSON Ingvar OO +0
22622 • OBRIANT Perry OO +0
22631 • AVILA Roger OO +0
22632 • LOTSPEICH Betty OO +0
22643 • TEAGUE C OO +0
22644 • LUJAN Diana OO +0
22653 • BACON Matthew OO +0
22654 • BARTON Jerald OO +0
22664 • CURATOLO Stanley OO +0
22665 • HUMPHREY Leon OO +0
X ORIOLE AV
0 BUS 27 RES 20 NEW

THRUSH 92397
WRIGHTWOOD

WEALTH CODE 6 0

X OAK
1621 • BALDWIN Arthur OO +0
1628 • NATHAWAY Katherine OO +0
1637 • RANSLEM C A 760-249-9045 +0
1638 • HENDRICKSON Wayne WRIGHT Thomas 760-249-4058 0
1646 • HUTCHINS Jerry OO +0
1649 • MEYERS Larry OO +0
1654 • CHRISTENSEN Robert OO +0

THRUSH 92397 CONT.
1658 • SCOTT John 760-249-3640 5
1662 • ZAMORA Mike OO +0
1665 • WARNER Billie OO +0
1676 • HANCOCK Eileen OO +0
SALDANA Ramon 760-249-3353 +0
1677 • BLEKER Ronald OO +0
1680 • BRUSE Terry OO +0
BUTLER Daniel 760-249-4706 +0
1685 • GRILL Bruce OO +0
1686 • PRESTON Ronald OO +0
1695 • SWITZER Monica OO +0
1698 • MCGINNIS James OO +0
1702 • MITCHELL Madelyn OO +0
1707 • MASON Ernest OO +0
1716 • KURMYS Andre OO +0
1719 • GAWRYLUK Steve OO +0
1724 • GUTIERREZ Pedro OO +0
1732 • BROGUIERE Raymond OO +0
X SYCAMORE
1741 • POLLOCK Edward OO +0
1750 • FIRNER Jack OO +0
1755 • SLATER Eric W OO +0
1758 • CHRISTOMERIS Ralph OO +0
1765 • SMITH Roy OO +0
1768 • HARGHMAN Clinton J 760-249-5222 +0
1776 • CARP Gene 760-249-3766 +0
1785 • RILES Philip OO +0
X LONE PINE CANYON RD
1812 • LIVINGSTON Marlene 760-243-4782
LIVINGSTON Richard 760-249-4782
1815 • LIGHT M J 760-249-8776
1825 • HERNANDEZ Margaret OO +0
1830 • WARNER Billie OO +0
1833 HOWELL Alan M 760-245-5306 +0
• RICHARDSON Dwayne OO +0
1840 • LEONARDO Clarence OO +0
1847 • ODETTO John OO +0
1850 • PRATT Roy OO +0
1851 • GUTIERREZ Richard OO +0
1853 • AXTHELM Ernest OO +0
1861 • PANOS John OO +0
1866 • SWEENEY Angeline OO +0
1869 • IPPOLITO Dominick OO +0
1876 • PEREZ Salvador OO +0
1884 • WALLIS Robert OO +0
1897 • GASTON Fred OO +0
1897 • PEZZUTI Thomas OO +0
1931 • WEYAND Henry L 760-245-6422
X HEATH CREEK DR
1956 XXXX OO +0
1959 DURHAM Patrica A 760-249-5475 8
X LODGEPOLE DR
1976 • WYSONG Freda 760-249-4551
WYSONG James 760-249-4551
2046 • DENVISTON William OO +0
• WRIGHTWOOD SCRTY PTR&DCTY AG 760-249-3840
X SHEEP CREEK DR
2101 • RANKIN Lane OO +0
2109 • RASMUSSEN Patrick OO +0
2165 • HOLLINGSWORTH O OO +0
1 BUS 62 RES 48 NEW

THULE 92311 BARSTOW

WEALTH CODE 3 0

34183 • VIDALES Guillermo 760-253-7940 0
34193 • HAYES Judith OO +0
34194 • MOYA Orlando OO +0
34202 • MARTINEZ Jorge OO +0
34204 XXXX OO
0 BUS 5 RES 3 NEW

THULE LN 92382
RUNNING SPGS

WEALTH CODE 6 0

X SCANDIA DR
2601 • STURROCK Harold OO +0
2610 • BEST Ronald G 909-867-3769
2615 • GERTJEJANSEN G OO +0
2625 • KING James OO +0
2635 • POLLITZ Hilda OO +0
2644 • WEAVER Henrietta OO +0
2645 • LOVING Charles 909-867-4199 6
2650 • QUASNY David OO +0
2678 • SIMONEAU Ann OO +0
2681 • HENRIQUES Melody OO +0
2690 • HOARK Robert OO +0
2696 • BIRCKHEAD James OO +0
0 BUS 12 RES 10 NEW

THUNDERBIRD DR 92352
LAKE ARROWHEAD

WEALTH CODE 8 0

26237 • MOFFETT Joan OO +0
26241 • BLANCHARD Geo 909-337-5870
26245 • GREEN Thomas OO +0
26250 • GARCIA Orine OO +0
26255 • YOUNG Dennis OO +0
26256 • THOMAS Randy OO +0
26270 • MEISER Lynn OO +0
26275 • SWANSON Kathleen OO +0
26278 • CAPILITAN Kenneth 909-337-0266
26297 BERKHARD Gregory 909-336-9767 8
26301 • FREMLIN Kelly OO +0
26316 • DOYLE Andrew OO +0
26325 • GIRARD Michael OO +0
26347 • LONDON Judyth LONDON Judyth LONDON Michael LONDON Michael 909-336-5320 909-338-0979 909-336-5320 909-336-0979 5 +0 5 +0
26350 • ROBINSON Erik 909-337-6047 3
THERRIEN Gregory G OO +0
26364 • TICHLAAR Mark OO +0
26397 • ROMAN Janice OO +0
26400 • EHRICH David OO +0
26410 • WINGERT Lance OO +0
26416 • RADEMAKER Matthew OO +0
26432 • CHRISTIANSEN T 909-337-2601 9
26433 • DE Soucy Dolores OO +0
26438 • JACOBSON Douglas OO +0
26439 • STOTT David 909-337-8657 +0
26445 • PENKOV Ivan OO +0
26448 • STEGEHUIS Heidi OO +0
26457 • HICKS Bruce 909-337-5585 +0
26468 PETTY Tim OO +0
• SEECOMBE Stephen OO +0
26478 • PROCHAZKA Julie OO +0
26483 • HENSEL Duane OO +0
26517 • SANNER Richard OO +0
26518 • GERSTLAUER Klaus OO +0

THUNDERBIRD DR 92352 CONT.
26522 • HAYWARD Patricia OO +0
26529 • MALONEY G OO +0
26540 XXXX OO
26541 BRUNER P 909-337-0670
MORTON Karen OO +0
26561 • SLOCUM Kurtis OO +0
26563 • SALVAN Marcelino OO +0
26565 • SILVERMAN Marylee OO +0
26591 • ERVAN John OO +0
26637 • WALSH Edward OO +0
WHITESTONE P 909-337-2258 8
WHITESTONE S 909-337-2258 8
26659 • GARRISON A W 909-337-5890
26611 • PHELPS Thomas OO +0
26613 • NGARCIA Joseph OO +0
26615 • KRISTENSEN Roy OO +0
26619 • WENTZ Richard B 909-337-8019
26621 • JOHNSON Janet OO +0
26625 • VANDERGEEST W OO +0
26627 • BOHANNON Loye OO +0
26633 • BURZA Norman A 909-337-5513
26637 • SANTIZO Armando OO +0
26645 • JONES Mark OO +0
26650 • DICKS Robert OO +0
26655 • SCHLESINGER Donald 909-336-3055
26659 • GRAMMAS Ronald OO +0
26660 • APPLETON C 909-337-6012
• APPLETON S 909-337-6012
26661 • GORETSKY Michael OO +0
26663 • RICHTER Ronald OO +0
26667 • BROWNING Barbara OO +0
26669 • THAGARD William OO +0
26671 • DAVIS Ronald OO +0
26672 • MILLER Earl Michael 909-337-3116 7
26675 • GRATZ Leslie OO +0
26676 • SCHMITZ Paul OO +0
26684 • COOKO William OO +0
26688 • LOHMAN Joseph OO +0
26690 • AMAN Neil OO +0
26691 • FOSTER Carolyn 909-336-0756 6
26692 • SILVER Louis OO +0
26695 • DRESSLER Rick OO +0
26696 • MOVIUS Gene OO +0
26697 • THOMPSON Richard OO +0
0 BUS 81 RES 60 NEW

THUNDERBIRD RD 92307
APPLE VALLEY

WEALTH CODE 3 5

20170 • BROWNER Ralph OO +0
CAMBELL Steve 760-946-1057 +0
SCHOONOVER Ronald D 760-946-2541 6
20185 • RIK Thomas OO +0
20188 XXXX OO
X TONEKAI RD
20195 BURKE James R 760-242-2407 5
• WATERS John OO +0
X KIAMICHI RD
20215 • LLAMAS Valente OO +0
MENDOZA Martin 760-242-1643 +0
20225 • MENDENHALL William OO +0
WALTERS Randall 760-946-3148 9
20240 GARRETT Leota 760-242-0681 +0
• SHALOM Yosef OO +0
20255 • HALPRIN Robert OO +0
20260 LHLIG Gary R 760-240-6506 6
• VERVEY Candace OO +0
20275 • QUERRERO Gerardo OO +0
20279 XXXX OO +0
20280 • ELLSWORTH Kevin OO +0
20289 • RANOLA Nelson OO +0
20292 • MCCOY Pamela OO +0
20315 • ALLEN Myrna OO +0
GAZLEY Cynthia L 760-242-1526 +0
20318 • MCCOY Pamela OO +0
20329 • VENTURA Tony OO +0
20330 BELTRAN Juan 760-946-1496 +0
• VELCI Sadie OO +0
20333 XXXX OO
20345 • RAZASHI Kaveh OO +0
20350 XXXX OO
20365 • HIESALU Allen OO +0
20366 • CROWE Ronald OO +0
20382 XXXX OO
20384 WILLIAMS Connie 760-946-1452 +0
20386 MOORE Joe 760-242-3235
MOORE Lila 760-242-3235
20411 BRENNESE Denice 760-240-5863 +0
• THUN Darrell OO +0
WEISS Paul E 760-946-1850 8
WEISS Paul E 760-242-0743 5
20425 • COEN Baruh OO +0
20445 • LEEBURG Laverne OO +0
20465 • FADIL Amad OO +0
X WANAQUE RD
20475 • KENNEY William OO +0
20700 • APPLE VLY SC VISTA CAMPANA MID 760-242-7011 5
• VISTA CAMPANA MIDDLE SCHOOL 760-242-3514 4
20702 • ACADEMY FOR ACADEMIC EXCLLNCE 760-242-3514 +0
• LEWIS CT FOR EDUCATIONAL RSRCH 760-242-3514 +0
20705 • HALPRIN Robert OO +0
20721 • MELENDEZ John 760-946-4033 +0
WILLIS Ray E OO +0
20744 XXXX OO
X WICHITA RD
X WASHOAN RD
20775 ALLISON Jeff W 760-946-0884 +0
• ZARYCKA Matthew OO +0
20788 XXXX OO
20791 DO Tam 760-945-0694 +0
• TONG Mui OO +0
X UTE RD
20810 XXXX OO
X AZTEC RD
20916 • LUCAS Donald 760-247-4250 5
ROBINSON Michelle OO +0
20940 • CRAIG Mark OO +0
20963 DECRUYENAERE Gerald G 760-247-7314 +0
• SNEE Marie OO +0
20971 • BLUM Jack 760-247-9849
20992 • ROSS Alicia 760-247-9849
• ROSS Elmer OO +0
X APACHE RD
21050 • COOPER Gilbert M 760-240-3577 5
21055 • BARRETO Ponciano OO +0
21070 XXXX OO
21071 XXXX OO
X BLACKFOOT RD
21128 • BERNABE Larry OO +0
21130 • LEIS Theodore OO +0
21147 • ECHEVERRIA Robert OO +0
• HEAVENLY HOMECARE 760-240-3209 8
21150 • GUZMAN Ruby 760-247-3161 +0
21168 • BARGENDER E F OO +0

THUNDERBIRD RD 92307 CONT.
21170 • MULKEY Kenny OO +0
21195 • SCOTT W A 760-247-9277
X COMANCHE RD
21205 • WILLIS Rex O 760-247-4393
21249 XXXX OO
21251 • WILLIS Rex OO +0
21258 • DEMJ Arlene OO +0
21271 • DEAN James OO 8
21291 • BAYUBAY Gora 760-247-2263
• BAYUBAY Ruby 760-247-2263
21293 • JONES Carl OO 5
X CHEYENNE RD
21303 • CREAMER Hubert 760-961-2225 9
21321 • MCDENILLA Luis 760-247-7778
21342 • BRANDT Otto OO +0
21345 • CON Avis OO 5
21360 KEELEY Betty J 760-247-6343
21369 • CRYDERMAN John OO +0
21370 • HAMPTON Craig OO +0
21380 • SMITH Renate OO +0
21388 XXXX OO
21391 • JOHNSON Joyce OO 9
X DAKOTA RD
21440 • FERREE Eugene OO +0
21441 • STOVER Terry OO 5
21450 • SHELBY Jessa 760-247-5316
21465 • ROWDEN Gene OO 5
X ERIE RD
21515 • STATER Gary OO +0
21560 • VASHCHENKO John OO +0
21580 • TAYLOR Russell OO 5
21585 • DELHERRO Cecilia OO +0
21607 XXXX OO
21615 • GONZALEZ Jose OO +0
21630 • KEELEY Norman OO +0
21645 • WILLIAMS Claude 760-961-1425 3
X NAVAJO RD
21660 • OLSON Roger OO +0
21665 • WOMACK Kenneth OO +0
21680 • NEGRETE Arthur OO +0
21750 • CALEB Janet OO +0
21789 • LIZOTTE George OO +0
X OSAGE RD
21825 • BROWN Thomas OO +0
21833 • MENDOZA Robert OO +0
21870 • ARMIJO Clyde OO +0
21872 XXXX OO
21981 • WAHLSTEEN Robert OO 5
X NANTICOKE RD
22061 • MEDINA Salvador 760-247-3442
22117 • ROBICHEAUX Paul D 760-240-4272
22133 • MORENO Henrietta OO +0
22149 • MURRAY Zora OO 5
22163 • LOFTUS Richard OO +0
22178 • UNDERWOOD Philip OO 9
22200 • LAMPHERE Galen OO +0
22207 CLARKE Cheryl 760-240-1798 +0
• HAJIPOUR Abdol OO +0
22223 • SMITH Jewel OO +0
22265 • SILVESTRI Roger OO 9
22279 • ALVAREZ Gilbert J 760-961-8204 5
22293 • MORETA Fil OO 5
22311 • WOESTE David OO +0
22327 • MILTS Linda OO 9
22341 • MEJIA Miguel OO +0
X TEMECULA RD
22387 • OLSEN Fred 760-247-5786 5
• OLSEN Mary 760-247-5786 5
X CENTRAL RD
22656 • SPEARS Larry OO +0
22714 XXXX OO +0
22724 • SMITH Donald OO +0
22727 XXXX OO +0
22737 • CLARK Lawrance OO +0
23787 DAVIS Dean L 760-247-3868 +0
• SKADSHEIM Janet OO +0
24565 • BASHAM Monte 760-247-2719 +0
24567 • THOMAS Terri OO +0
24777 • DAVIES Thomas OO +0
X DESERT STAR RD
X SHERRI LN
X BURNS DR
24543 • BRUNS Janet OO +0
24979 • ROOT Thomas OO +0
STANTON Frank W 760-247-9430 7
5 BUS 144 RES 78 NEW

THUNDER MOUNTAIN
91784 UPLAND

WEALTH CODE 9 0

2534 • LEVENSON Jason OO +0
2538 • CRUZ Francisco OO +0
2542 • WILLIAMS Mark OO +0
2546 FRASER L 909-931-2816 4
2548 • FRASER Larry OO 8
2550 • POLLEY Michael OO +0
X CYPRESS DR
2555 • BAHOUTH Samir OO +0
2559 • VELTE Jane 909-585-8941
• VELTE Larry 909-585-8941
2562 • LASSITER Jack OO 7
2563 • ISSHAK Marwan OO +0
2571 • KOLBER Todd OO 8
2574 • WILSON Leon OO +0
2575 • JUNG Marvin OO +0
X N EUCLID CRES E
0 BUS 14 RES 8 NEW

THUNDER MTN AV (98)
91739
RANCHO CUCMNGA

WEALTH CODE 6 0

6271 • JEFFERYS Ingrid OO +0
6281 • LOZANO Arnold OO +0
6291 • HECKER Winston 909-593-6753 9
• HECKER Winston 909-980-3584 9
6301 • MONTERONE Michael OO +0
6311 • APTTEN Robert OO +0
6331 LANGLOIS Dick 909-941-9782 8
6351 • ARCE Rosario OO +0
6361 • SCHILLER Kevin OO +0
6371 • MORRISON Alan OO +0
6381 • BATISTE Terrance OO +0
0 BUS 11 RES 8 NEW

TIA JUANA 92411
SAN BERNARDINO

X FOOTHILL BLVD E
518 ARELLANO Rudy 909-888-4748 +0
• ULLOA Gustavo OO +0
524 • JUNDA Rose OO +0
527 ARRIETA M 909-888-6927 7
531 • ESTRADA Esther OO +0
532 • DUNGA Jerry OO 7
540 • GONZALES Rito OO 7
541 • MORENO Christino OO +0
548 CABRERA Frances C 909-888-1558 +0
• CPINLAS Ida OO +0
554 • LEMUS Gilbert OO 7
555 • MORALES John OO 9
563 • RAMIREZ Octavano OO +0
571 • MORALES Juan OO +0
579 • ULLOA Gilbert OO +0
585 • ULLOA Elbira OO +0
595 • ROJAS Raymond OO +0
X 6TH W
X 10TH W
1013 XXXX OO
1048 • CHISOM Gladys 909-885-1913 +0
1050 • JACKSON Harley MILLER Otis M 909-889-2088 9
1052 • WILKERSON Vincent OO +0
1061 • LESTER Mary OO +0
1068 • CASH Zelpha OO +0
1069 • MORRIS Bobbie OO +0
1076 • SMITH Milton OO +0
1077 • BYRD Ursula OO +0
1088 • TUCKER Steven OO +0
1089 • BYRD Ursula OO +0
1094 • BALLARD Ursula LEE Frances 909-383-9020 7
X 11TH W
1116 • CASTANEDA Crisanto 909-381-2366
1124 JACKSON Louise 909-889-2243
• PERKINS Louise OO +0
1125 • DELGADILLO Sergio OO +0
1132 • WHITE Bennie OO +0
1139 • CREENE Jamahl OO 7
1140 • BECERRA Jose OO 7
1145 • WILLIAMS Myrtle OO +0
1147 • WILLIAMS Calvin OO +0
1148 • FOSTER Shirley B 909-885-7660 +0
1156 DIXON C 909-884-7987 2
• HOLLOMAN Fred OO +0
1164 • GOMEZ Isidro OO +0
1165 • WILLIAMS Myrtle OO +0
1172 • FLORES Luis OO +0
1175 • BUCHANAN Myrtle WASHINGTON Olivia 909-885-6785 9
1180 XXXX OO
1183 • LIVINGSTON Anita OO +0
X BASE LINE W
0 BUS 50 RES 34 NEW

TIAMA 92307
APPLE VALLEY

WEALTH CODE 3 0

16968 • MULLEN Charles 760-240-3326
• MULLEN Lena 760-240-3326
16969 • BOHI Bruce M 760-240-1262 4
17008 • BOHI Bruce M 760-247-4153 5
17021 • WHITE Michael OO +0
17024 • BROWN Paul OO 9
17035 • MARTIN Ernest R 760-240-3098
17047 • VANDE Sompele OO +0
17053 • HOUGH David OO +0
X WAALEW RD
0 BUS 9 RES 3 NEW

TIARA AV 92346
HIGHLAND

WEALTH CODE 8 0

6703 • CONTRERAS Larry OO 8
6715 • KASTEN Charles OO 9
6722 • EMERSON John C 909-862-8602 5
6725 • HERNANDEZ Alberto OO +0
6730 • TORRES Gregory OO +0
6732 • LUCIO Maria OO +0
6741 • BINKLEY James OO +0
6744 • CANDELARIA Gloria 909-864-6730
• CANDELARIA Tony 909-864-6730
6756 • WYNN William OO +0
6757 • MILLER Leland A 909-864-0828 4
6765 • KEHOE Richard OO +0
6768 • HARRIS Kenneth OO 5
6776 • TORRES John OO +0
6779 • ZYLSTRA Maryann OO +0
6784 • TAYLOR Laverne OO +0
6787 • HELSER Ruth OO +0
6790 • COMADENA Sandra OO +0
6795 • MONTZOROS Vanick OO 5
6814 • ROSS Raymond S 909-862-7608 4
6817 • CORNELIUS David G 909-862-3585 5
6828 • OREOL Harry OO +0
6831 • KAENEL Mark OO +0
6836 • MCDEVITT Charles OO +0
6843 • RUSTON Michael OO 5
6844 • QO Jessica OO +0
6850 • ROJAS Daniel Jr 909-864-2543 +0
6851 • AGUILAR Gary OO +0
6862 • GUTIERREZ Joseph OO +0
6867 • JOHNSON Tracy OO +0
6874 • MELLMAN H R 909-862-5849 +0
6875 • GUY Robert OO 5
6882 • SCANNELLA Deanna OO +0
6883 • KOLODZIK Kari OO 5
6887 • RUTSKIS Duane OO +0
6891 • MINK Larry OO +0
6897 • CORONA Octavio OO 5
6913 • SANDS Steven OO +0
6927 • MOE Darnell OO +0
6935 • FABELA Laura OO +0
7020 • BEAMAN Patricia OO 5
7032 • ELLINGTON Edward OO +0
7044 BABBITT Jura M 909-862-4866 +0
• PETERS Jay OO +0
7068 • RAMIREZ Miguel OO +0
7080 • PAINTER Charles OO +0
7092 • STEVENS Craig OO +0
7114 • COAL CONSTRUCTION CO 909-864-3089 6
• SILVA David OO +0
7115 • SCARBOROUGH G OO 9
7122 • LOGAN Stanley OO +0
7123 • MCVEY Eugene OO 5
7130 • BARRY S 909-425-1760 1
7131 • LEDESMA Joseph OO +0
7138 • SMITH Charles OO +0
7139 • LIMBOURNE Kenneth OO +0

TIARA AV
7146 • SKEETE Violet OO 9
7147 • MATHUR Bharti 909-425-1914 1
• MATHUR Vijay 909-425-1914 1
7154 • URIAS Gloria OO 9
7155 • MCDARRY Jas Jr 909-862-5688 1
7162 • BERNARDINI Michael OO +0
7163 • ACREY Terrell OO 9
7170 • URBAUER C H 909-864-0594 1
7171 BURTON Stephen 909-425-8580 +0
• WILLIAMS Daniel OO +0
7178 • ALLUM Martis OO +0
7179 • BREWER Ronald OO +0
7187 • LIMBOURNE Phyllis OO +0
7208 • PHAM Mau 909-862-4654 9
7209 • PRUITT David OO +0
7216 • DEVINCE Nicholas OO 5
7217 • PARAMO Steven OO 9
7224 • URBAN Richard OO +0
7225 • YOUNG James OO +0
7232 • ANDERSON Danny OO +0
7240 • DATLIN Lawrence OO 9
7241 • ADACHI James OO +0
7248 • GRIFFIN George OO +0
7249 • ALLIS Gary OO 7
7257 • ALDERSON Margaret 909-862-6216 8
• ALDERSON Paul 909-862-6216 9
7264 • DALTON Robt C 909-864-2745 5
7265 • BARR Darrin OO +0
7272 • LUNA Octavio OO +0
7273 • BROYER Howard OO +0
1 BUS 85 RES 44 NEW

TIARA AV S 91761
ONTARIO

WEALTH CODE 7 0

X BANYON
2511 • HOOPER Jesse OO +0
2512 MANCINAS Magdalena 909-923-4222 8
• NEGRETE Oscar OO +0
2517 • SEAVEY Bryant OO 7
2518 • SWOFFORD Verlan OO 5
2523 • HOLT Kenneth OO +0
2524 • NAKAWAKI Glenn K 909-923-2742
• NAKAWAKI Sharon 909-923-2742
2529 • WEEMS Jerry OO +0
2530 • MADURO Jose OO 9
2534 • LEVERS James 909-947-1668
LEVERS Jean 909-947-1668
2535 • LUIS Heider 909-923-6909 5
2541 • ALARCON Armando OO 9
2542 • PEREZ Salvador OO +0
2603 • SCHULTZ Lynn OO 5
2604 • BARKLEY Darrell OO +0
2609 • MILLIGAN Gene OO +0
2610 • OLIVAS Gilbert OO +0
2613 BELTETON Luz 909-923-5906 +0
• BELTETON Rory OO +0
2614 • SCHULTZ Horst OO +0
2619 • SALAS Frank OO 9
2620 • BALSZ Nicholas OO +0
2621 • PEREZ Heriberto OO +0
2622 • AUD Debra 909-947-9443 +0
2626 • REECE Randy OO 5
2631 • WILKERSON Ronald 909-923-8305 +0
2632 • SANCHEZ Ismael OO +0
2635 • HARWOOD Alexius OO 5
2636 • REARTE Ernesto OO +0
2641 • WALKER Thomas OO 5
2642 XXXX OO
2647 • HOLLINGSHEAD E OO +0
X TAM O SHANTER
0 BUS 34 RES 16 NEW

TIBBOT 92377 RIALTO

WEALTH CODE 6 0

X CASMALIA
735 • GRAY Jo OO +0
746 • BATTEE Louis OO +0
749 • GIBSON Bernard OO +0
759 • LAWRENCE G D 909-874-5600
766 • HILLMAN Doris OO
771 • DELGADO Miguel OO +0
778 • IRVING Howard OO
781 • GIBSON Doris OO
792 • MARTINEZ Eduardo OO +0
799 • MCGOWAN James OO
906 • STANOWSKI Gary OO +0
909 • HARRIS Phillip OO +0
920 • DERAS Patricia OO +0
MACHADO Raquel 909-874-2792 +0
VAZQUEZ Teresa 909-920-0177 +0
823 • JACKSON Arthur OO +0
834 • GLOVER Danny OO +0
837 • OCHOA Jose A 909-920-0868 +0
851 • BEASLEY Gwen 909-875-4936 6
862 • ROSS Johnny OO +0
865 • STEVENS Freda OO +0
876 • FRESQUEZ William OO +0
879 • MCDANIEL Thomas OO +0
893 • RUIZ Daniel OO +0
X SPRUCE AV
0 BUS 24 RES 15 NEW

TIBURON DR (92) 92392
VICTORVILLE

WEALTH CODE 4 0

12913 • BUSH Jennie OO +0
12914 • DAVIS Bruce OO 8
12925 • MARTIN Thomas OO 5
12926 • WASYLKIEWICZ E OO +0
12937 • WASHINGTON Gerald 760-245-9779 +0
12940 • FORSYTH Lisa OO +0
0 BUS 6 RES 3 NEW

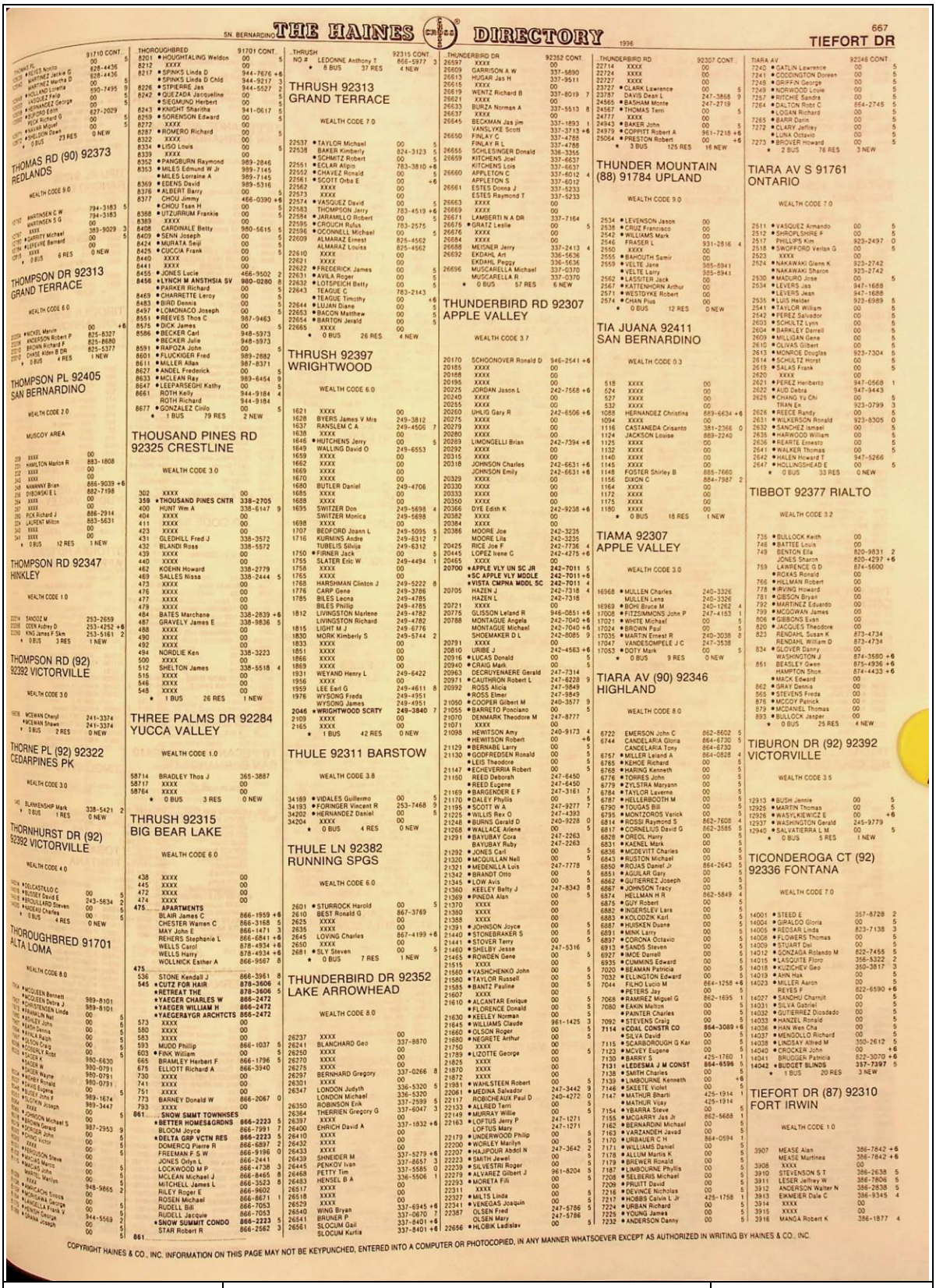
TICONDEROGA CT (92)
92336 FONTANA

WEALTH CODE 7 0

14001 • PEREZ Edgar OO 9
14004 • BROADHURST Michael OO 9
14005 • REDSAR Linda 909-823-7138 3
14008 • FLOWERS Thomas OO 5
14009 • HUNTSPON Andrew OO +0
14012 • GONZAGA Rolando M 909-822-7455 5
14015 • BERMUDEZ Manuel 909-854-8606 +0
14018 • KUZICHEV Geo 909-350-3817 3
14019 • AHN Hak OO 5
14023 • LUNA Josefina OO +0

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| Subject | 8800-8900 Block of Three Flags Rd | 2000 |
|---|---|---|



SN. BERNARDINO **THE HAINES** CHECK **DIRECTORY** 1996

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**TIEFORT DR**

THOMAS RD (90) 92373
REDLANDS
WEALTH CODE 9.0

THOMPSON DR 92313
GRAND TERRACE
WEALTH CODE 6.0

THOMPSON PL 92405
SAN BERNARDINO
WEALTH CODE 2.0
MUSCOY AREA

THOMPSON RD 92347
HINKLEY
WEALTH CODE 1.0

THOMPSON RD (92)
92392 VICTORVILLE
WEALTH CODE 3.0

THORNE PL (92) 92322
CEDARPINES PK
WEALTH CODE 3.0

THORNHURST DR (92)
92392 VICTORVILLE
WEALTH CODE 4.0

THOROUGHBRED 91701
ALTA LOMA
WEALTH CODE 8.0

THOUSAND PINES RD
92325 CRESTLINE
WEALTH CODE 3.0

THREE PALMS DR 92284
YUCCA VALLEY
WEALTH CODE 1.0

THRUSH 92315
BIG BEAR LAKE
WEALTH CODE 6.0

THRUSH 92313
GRAND TERRACE
WEALTH CODE 7.0

THRUSH 92397
WRIGHTWOOD
WEALTH CODE 6.0

THULE 92311 BARSTOW
WEALTH CODE 3.8

THULE LN 92382
RUNNING SPGS
WEALTH CODE 6.0

THUNDERBIRD DR 92352
LAKE ARROWHEAD
WEALTH CODE 8.0

THUNDERBIRD DR 92307
APPLE VALLEY
WEALTH CODE 3.7

THUNDERBIRD RD 92307
APPLE VALLEY
WEALTH CODE 9.0

THUNDER MOUNTAIN
(88) 91784 UPLAND
WEALTH CODE 9.0

TIA JUANA 92411
SAN BERNARDINO
WEALTH CODE 0.3

TIAMA 92307
APPLE VALLEY
WEALTH CODE 3.0

TIARA AV (90) 92346
HIGHLAND
WEALTH CODE 8.0

TIARA AV S 91761
ONTARIO
WEALTH CODE 7.0

TIBBOT 92377 RIALTO
WEALTH CODE 3.2

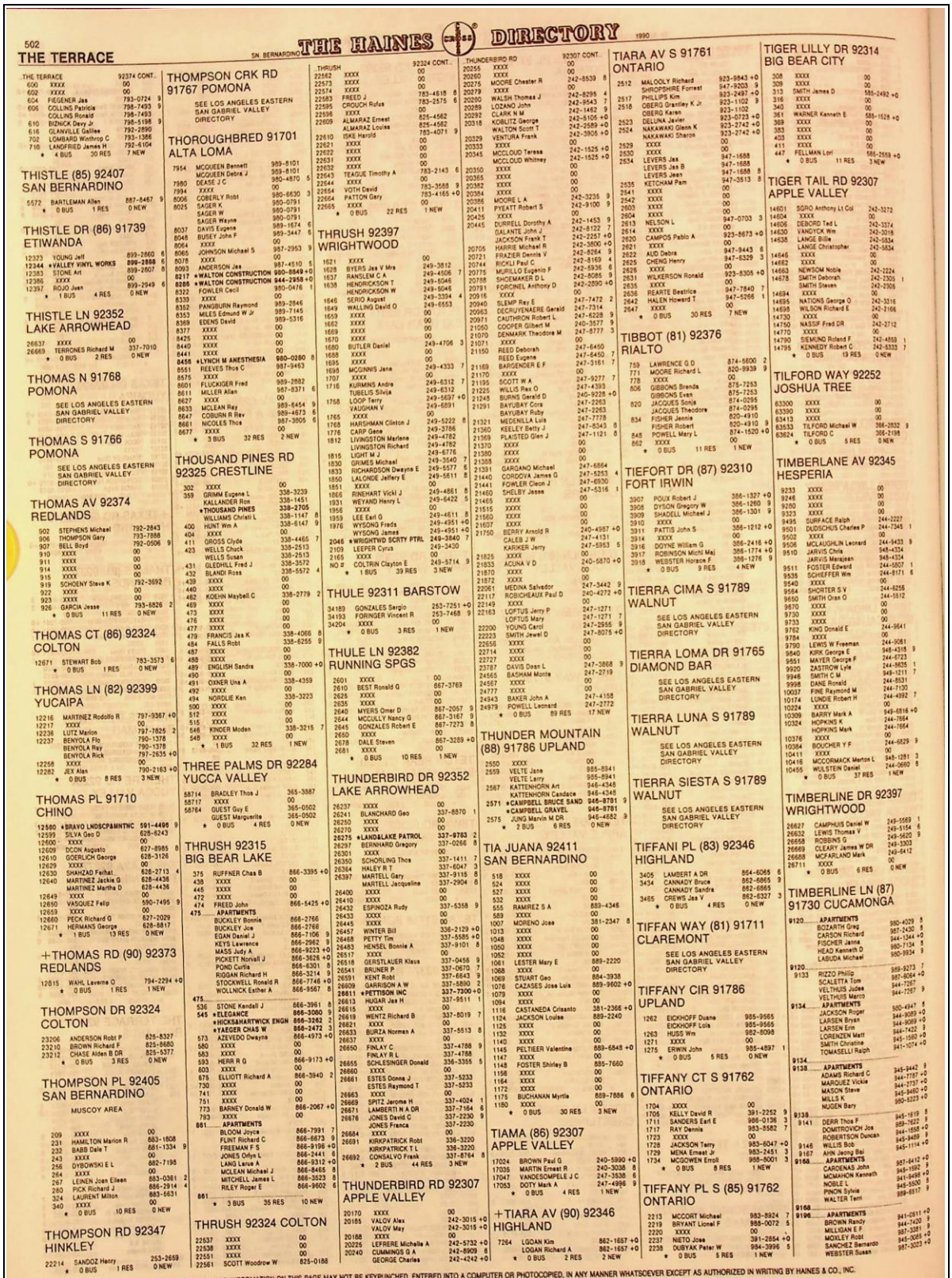
TIBURON DR (92) 92392
VICTORVILLE
WEALTH CODE 3.5

TICONDEROGA CT (92)
92336 FONTANA
WEALTH CODE 7.0

TIEFORT DR (87) 92310
FORT IRWIN
WEALTH CODE 1.0

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| Subject | 8800-8900 Block of Three Flags Rd | 1996 |
|---|---|---|



502 SN. BERNARDINO **THE HAINES DIRECTORY** 1990

## THE TERRACE

THE TERRACE 92374 CONT.
600 XXXX 00
602 XXXX 00
604 FIEGENER Jas 793-0724 9
606 COLLINS Patricia 798-7493 9
COLLINS Ronald 798-7493
610 BIZNICK Davy Jr 798-5198 9
616 GLANVILLE Galilee 792-2890 9
702 LOMBARD Winthrop C 793-1366
710 LANDFRIED James H 792-5104
★ 4 BUS 30 RES 7 NEW

## THISTLE (85) 92407 SAN BERNARDINO

5572 BARTLEMAN Allen 887-8467 9
★ 0 BUS 1 RES 0 NEW

## THISTLE DR (86) 91739 ETIWANDA

12323 YOUNG Jeff 899-2660 6
12344 ★VALLEY VINYL WORKS 899-2888 6
12383 STONE Art 899-2607 8
12386 XXXX 00
12397 ROJO Juan 899-2949 6
★ 1 BUS 4 RES 0 NEW

## THISTLE LN 92352 LAKE ARROWHEAD

26637 XXXX 00
26669 TERRONES Richard M 337-7010
★ 0 BUS 2 RES 0 NEW

## THOMAS N 91768 POMONA

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## THOMAS S 91766 POMONA

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## THOMAS AV 92374 REDLANDS

902 STEPHENS Michael 792-2843
904 THOMPSON Gary 793-7888
907 BELL Boyd 792-0506 9
910 XXXX 00
911 XXXX 00
914 XXXX 00
915 XXXX 00
919 SCHOENY Steve K 792-3692
922 XXXX 00
923 XXXX 00
926 GARCIA Jesse 793-6826 2
★ 0 BUS 11 RES 0 NEW

## THOMAS CT (86) 92324 COLTON

12671 STEWART Bob 783-3573 6
★ 0 BUS 1 RES 0 NEW

## THOMAS LN (82) 92399 YUCAIPA

12216 MARTINEZ Rodolfo R 797-9367 +0
12217 XXXX 00
12236 LUTZ Marion 797-7825 2
12237 BENYOLA Flo 790-1378
BENYOLA Ray 790-1378
BENYOLA Rick 797-2635 +0
12258 XXXX 00
12282 JEX Alan 790-2163 +0
★ 0 BUS 8 RES 3 NEW

## THOMAS PL 91710 CHINO

12580 ★BRAVO LNDSCP&MNTNC 591-4496 9
12599 SILVA Geo D 628-8243
12600 XXXX 00
12609 DCON Augusto 627-8985 8
12610 GOERLICH George 628-3126
12629 XXXX 00
12630 SHAHZAD Farhat 628-2713 4
12640 MARTINEZ Jackie G 628-4436
MARTINEZ Martha D 628-4436
12649 XXXX 00
12650 VASQUEZ Felip 590-7495 9
12659 XXXX 00
12660 PECK Richard G 627-2029
12671 HERMANS George 628-8817
★ 1 BUS 13 RES 0 NEW

## +THOMAS RD (90) 92373 REDLANDS

12815 WAHL Laverne O 794-2294 +0
★ 0 BUS 1 RES 1 NEW

## THOMPSON DR 92324 COLTON

23206 ANDERSON Robt P 825-8327
23210 BROWN Richard F 825-8680
23212 CHASE Alden B DR 825-5377
★ 0 BUS 3 RES 0 NEW

## THOMPSON PL 92405 SAN BERNARDINO

MUSCOY AREA

209 XXXX 00
231 HAMILTON Marion R 883-1808
232 BABB Dale T 881-1334 9
243 XXXX 00
256 DYBOWSKI E L 882-7198
264 XXXX 00
267 LEINEN Joan Eileen 883-0361 2
280 PICK Richard J 886-2914 4
324 LAURENT Milton 883-5631
340 XXXX 00
★ 0 BUS 10 RES 0 NEW

## THOMPSON RD 92347 HINKLEY

22214 SANDOZ Henry 253-2659
★ 0 BUS 1 RES 0 NEW

## THOMPSON CRK RD 91767 POMONA

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## THOROUGHBRED 91701 ALTA LOMA

7954 MCQUEEN Bennett 989-8101
MCQUEEN Debra J 989-8101
7980 DEASE J C 980-4870 5
7994 XXXX 00
8006 COBERLY Robt 980-6630 3
8025 SAGER K 980-0791
SAGER W 980-0791
SAGER Wayne 980-0791
8037 DAVIS Eugene 989-1674 6
8048 BUSEY John F 989-3447 6
8064 XXXX 00
8065 JOHNSON Michael S 987-2953 9
8078 XXXX 00
8093 ANDERSON Jas 987-4510 5
8217 ★WALTON CONSTRUCTION 980-8949 +0
8286 ★WALTON CONSTRUCTION 944-2958 +0
8322 FOWLER Cecil 980-0476 1
8339 XXXX 00
8352 PANGBURN Raymond 989-2846
8353 MILES Edmund W Jr 989-7145
8369 EDENS David 989-5316
8377 XXXX 00
8425 XXXX 00
8440 XXXX 00
8441 XXXX 00
8458 ★LYNCH M ANESTHESIA 980-0280 8
8551 REEVES Thos C 987-9463
8575 XXXX 00
8601 FLUCKIGER Fred 989-2682
8611 MILLER Allan 987-8371 6
8627 XXXX 00
8633 MCLEAN Ray 989-6454 9
8647 COBURN R Rev 989-4673 6
8661 NICOLES Thos 987-3805 6
8677 XXXX 00
★ 3 BUS 32 RES 2 NEW

## THOUSAND PINES RD 92325 CRESTLINE

302 XXXX 00
359 GRIMM Eugene L 338-3239
KALLANDER Ron 338-1451
★THOUSAND PINES 338-2705
WILLIAMS Christi L 338-1147 8
400 HUNT Wm A 338-6147 9
404 XXXX 00
411 GROSS Clyde 338-4465 7
423 WELLS Chuck 338-2513
WELLS Susan 338-2513
431 GLEDHILL Fred J 338-3572
432 BLANDI Ross 338-5572 4
439 XXXX 00
440 XXXX 00
462 KOEHN Maybell C 338-2779 2
469 XXXX 00
473 XXXX 00
476 XXXX 00
477 XXXX 00
479 FRANCIS Jas K 338-4066 8
484 FALLS Robt 338-6255 9
487 XXXX 00
488 XXXX 00
489 ENGLISH Sandra 338-7000 +0
490 XXXX 00
491 CONER Una A 338-4359
492 XXXX 00
494 NORDLIE Ken 338-3223
500 XXXX 00
512 XXXX 00
515 XXXX 00
546 KINDER Moden 338-3215 7
548 XXXX 00
★ 1 BUS 32 RES 1 NEW

## THREE PALMS DR 92284 YUCCA VALLEY

58714 BRADLEY Thos J 365-3887
58717 XXXX 00
58764 GUEST Guy E 365-0502
GUEST Marguerite 365-0502
★ 0 BUS 4 RES 0 NEW

## THRUSH 92315 BIG BEAR LAKE

375 RUFFNER Chas B 866-3395 +0
438 XXXX 00
445 XXXX 00
472 XXXX 00
474 FREED John 866-5425 +0
475 APARTMENTS
BUCKLEY Bonnie 866-2766
BUCKLEY Joe 866-2768
EGAN Daniel J 866-7106 9
KEYS Lawrence 866-2962 8
MASS Judy A 866-9223 +0
PICKETT Norvall J 866-3626 +0
POND Curtis 866-6301 8
RIGGAN Richard H 866-3214 9
STOCKWELL Ronald R 866-7746 +0
WOLLNICK Esther A 866-9567 8
475
536 STONE Kendall J 866-3961 8
545 ★ELEGANCE 866-3080 9
★HICKS&HARTWICK ENGN 866-3262 2
★YAEGER CHAS W 866-2472 3
573 AZEVEDO Dwayne 866-4973 +0
580 XXXX 00
583 XXXX 00
593 HERR R G 866-9173 +0
603 XXXX 00
675 ELLIOTT Richard A 866-3940 2
730 XXXX 00
741 XXXX 00
751 XXXX 00
773 BARNEY Donald W 866-2067 +0
793 XXXX 00
861 APARTMENTS
BLOOM Joyce 866-7991 7
FLINT Richard C 866-6673 9
FREEMAN F S 866-9196 +0
JONES Orlyn L 866-2441 6
LANG Larue A 866-9312 +0
MCLEAN Michael J 866-6465 8
MITCHELL James L 866-3523 8
RILEY Roger E 866-9602 6
861
★ 3 BUS 35 RES 10 NEW

## THRUSH 92324 COLTON

22537 XXXX 00
22538 XXXX 00
22551 XXXX 00
22561 SCOTT Woodrow W 825-0188

THRUSH 92324 CONT.
22562 XXXX 00
22573 XXXX 00
22574 XXXX 00
22583 FREED J 783-4618 8
22585 CROUCH Rufus 783-2575 6
22596 XXXX 00
22609 ALMARAZ Ernest 825-4562
ALMARAZ Louis 783-4071 9
22610 ISKE Harold 00
22621 XXXX 00
22622 XXXX 00
22631 XXXX 00
22632 XXXX 783-2143 6
22643 TEAGUE Timothy A 00
22644 XXXX 783-3588 9
22654 VOTH David 783-4165 +0
22664 PATTON Gary 00
22665 XXXX 00
★ 0 BUS 22 RES 1 NEW

## THRUSH 92397 WRIGHTWOOD

1521 XXXX 00
1628 BYERS Jas V Mrs 249-3812
1637 RANSLEM C A 249-4506 7
1638 HENDRICKSON T 249-5046
HENDRICKSON W 249-5046
1646 SERIO August 249-3394 4
1649 WALLING David O 249-6553
1659 XXXX 00
1662 XXXX 00
1669 XXXX 00
1670 XXXX 00
1680 BUTLER Daniel 249-4706 3
1688 XXXX 00
1695 XXXX 00
1695 MCGINNIS Jane 249-4333 7
1707 XXXX 00
1716 KURMINS Andre 249-6312 7
TUBELIS Silvia 249-6312
1758 LOOP Terry 249-5637 +0
LOOP Terry 249-6891
1765 XXXX 00
1768 HARSHMAN Clinton J 249-5222 8
1776 CARP Gene 249-3786
1812 LIVINGSTON Marlene 249-4782
LIVINGSTON Richard 249-4782
1815 LIGHT M J 249-6776
1830 GRIMES Michael 249-3540 7
1833 RICHARDSON Dwayne E 249-5577 6
1850 LALONDE Jeffery E 249-5611 8
1851 XXXX 00
1866 RINEHART Vicki J 249-4861 8
1931 WEYAND Henry L 249-6422 5
1956 XXXX 00
1959 LEE Earl G 249-4611 8
1976 WYSONG Freds 249-4951 +0
WYSONG James 249-4951 +0
2046 ★WRIGHTWD SCRTY PTRL 249-3840 7
2109 LEEPER Cyrus 249-3430
2165 XXXX 00
NO # COLTRIN Clayton E 249-5714 9
★ 1 BUS 39 RES 3 NEW

## THULE 92311 BARSTOW

34189 GONZALES Sergio 253-7251 +0
34193 FORINGER Vincent R 253-7468 9
34204 XXXX 00
★ 0 BUS 3 RES 1 NEW

## THULE LN 92382 RUNNING SPGS

2601 XXXX 00
2610 BEST Ronald G 867-3769
2625 XXXX 00
2635 XXXX 00
2640 MYERS Omar D 867-2067 9
2644 KELLY Nancy G 867-3167 9
2645 GONZALES Robert E 867-7273 8
2650 XXXX 00
2678 DALE Steven 867-3289 +0
2681 XXXX 00
★ 0 BUS 10 RES 1 NEW

## THUNDERBIRD DR 92352 LAKE ARROWHEAD

26237 XXXX 00
26241 BLANCHARD Geo 337-8870 1
26250 XXXX 00
26270 XXXX 00
26275 ★LANDLAKE PATROL 337-9783 2
26297 BERNHARD Gregory 337-0266 8
26301 XXXX 00
26350 SCHORLING Thos 337-1411 7
26364 HALEY R T 337-6047 3
26397 MARTELL Gary 337-9115 8
MARTELL Jacqueline 337-2904 8
26400 XXXX 00
26410 XXXX 00
26432 ESPINOZA Rudy 337-5358 9
26433 XXXX 00
26445 XXXX 00
26457 WINTER Bill 336-2129 +0
26468 PETTY Tim 337-5585 +0
26483 HENSEL Bonnie A 337-9101 8
26517 XXXX 00
26518 GERSTLAUER Klaus 337-0456 9
26541 BRUNER P 337-0670 7
26591 KENT Robt 337-6843 9
26609 GARRISON A W 337-5890 9
26611 ★PETTISON INC 337-7300 +0
26613 HUGAR Jas H 337-9511 1
26615 XXXX 00
26619 WENTZ Richard B 337-8019 7
26621 XXXX 00
26633 BURZA Norman A 337-5513 8
26637 XXXX 00
26650 FINLAY C 337-4788 9
FINLAY R L 337-4788
26655 SCHLESINGER Donald 336-3355 5
26660 XXXX 00
26661 ESTES Donna J 337-5233
ESTES Raymond T 337-5233
26663 XXXX 00
26669 SPITZ Jerome H 337-4024 1
26671 LAMBERTI N A DR 337-7164 6
26676 JONES David C 337-2230 9
JONES Francs 337-2230
26684 XXXX 00
26691 KIRKPATRICK Robt 336-3220
KIRKPATRICK T L 336-3220
26692 CONSALVO Frank 337-8764 8
★ 2 BUS 44 RES 3 NEW

## THUNDERBIRD RD 92307 APPLE VALLEY

20170 XXXX 00
20185 VALOV Alex 242-3015 +0
VALOV May 242-3015 +0
20188 XXXX 00
20225 LEFRERE Michelle A 242-5732 +0
20240 CUMMINGS G A 242-8909 8
GEORGE Charles 242-4242 +0

THUNDERBIRD RD 92307 CONT.
20255 XXXX 00
20260 XXXX 00
20275 MOORE Chester R 242-8539 8
20279 XXXX 00
20280 WALSH Thomas J 242-8295 4
20289 LOZANO John 242-9543 9
20292 CLARK N M 242-1462 9
20318 KOBLITZ George 242-6106 +0
WALTON Scott T 242-2589 +0
VENTURA Frank 242-3906 +0
20329 XXXX 00
20333 MCCLOUD Teresa 242-1525 +0
20345 MCCLOUD Whitney 242-1525 +0
20350 XXXX 00
20365 XXXX 00
20382 XXXX 00
20384 XXXX 00
20386 MOORE L A 242-3235 9
20411 PYEATT Robert S 242-9100 9
20425 XXXX 00
20445 DURRELL Dorothy A 242-1453 9
GALANTE John J 242-8122 7
JACKSON Frank T 242-2257 +0
HARRIE Michael R 242-3800 +0
20705 XXXX 00
20721 FRAZIER Dennis V 242-8204 9
20744 RICKLI Paul C 242-8169 4
20775 MURILLO Eugenio F 242-5936 6
20788 SHOEMAKER D L 242-8085 9
20791 FORCINEL Anthony D 242-2090 +0
20916 XXXX 00
20940 SLEMP Rex E 247-7472 2
20963 DECRUYENAERE Gerald 247-7314
20971 CAUTHRON Robert L 247-6228 9
21050 COOPER Gilbert M 240-3577 9
21070 DENMARK Theodore M 247-8777 3
21071 XXXX 00
21150 REED Deborah 247-6450 7
REED Eugene 247-6450 7
21169 BARGENDER E F 247-3161 7
21170 XXXX 00
21195 SCOTT W A 247-9277 7
21225 WILLIS Rex O 247-4393 9
21245 BURNS Gerald D 242-9228 +0
21291 BAYUBAY Cora 247-2263
BAYUBAY Ruby 247-2263
21321 MEDENILLA Luis 247-7778
21360 KEELEY Betty J 247-8343 8
21369 PLAISTED Glen J 247-1121 8
21370 XXXX 00
21380 XXXX 00
21388 XXXX 00
21391 GARGANO Michael 247-6864
21440 CORDOVA James G 247-6253 4
21441 FOWLER Cleon J 247-6930
21460 SHELBY Jesse 247-5316 1
21465 XXXX 00
21515 XXXX 00
21560 XXXX 00
21607 XXXX 00
21750 BERRY Arnold R 240-4987 +0
CALEB J W 247-4131
KARIKER Jerry 247-5953 5
21825 XXXX 00
21833 ACUNA V D 240-5870 +0
21870 XXXX 00
21872 XXXX 00
22061 MEDINA Salvador 247-3442 9
22117 ROBICHEAUX Paul D 240-4272 +0
22149 XXXX 00
22163 LOFTUS Jerry P 247-1271 7
LOFTUS Mary 247-1271 7
22200 YOUNG Carol 247-2955 9
22223 SMITH Jewel D 247-8075 +0
22558 XXXX 00
22714 XXXX 00
22727 XXXX 00
23787 DAVIS Dean L 247-3868 9
24565 BASHAM Monte 247-2719
24666 XXXX 00
24777 XXXX 00
24943 BAKER John A 247-4158
24979 POWELL Leonard 247-2772
★ 0 BUS 89 RES 17 NEW

## THUNDER MOUNTAIN (88) 91786 UPLAND

2550 XXXX 00
2559 VELTE Jane 985-8941
VELTE Larry 985-8941
2567 KATTENHORN Art 946-4348
KATTENHORN Candace 946-4348
2571 ★CAMPBELL BRUCE SAND 946-8781 9
★CAMPBELL GRAVEL 946-8781
2575 JUNG Marvin M DR 946-4682 9
★ 2 BUS 6 RES 0 NEW

## TIA JUANA 92411 SAN BERNARDINO

518 XXXX 00
524 XXXX 00
527 XXXX 00
532 XXXX 00
555 RAMIREZ S A 889-4346
589 XXXX 00
1007 MORENO Jose 381-2347 8
1013 XXXX 00
1048 XXXX 00
1050 XXXX 00
1052 XXXX 00
1061 LESTER Mary E 889-2220
1068 XXXX 00
1069 STUART Geo 884-3938
1078 CAZASES Jose Luis 889-9602 +0
1079 XXXX 00
1094 XXXX 00
1116 CASTANEDA Crisanto 381-2366 +0
1124 JACKSON Louise 889-2240
1125 XXXX 00
1132 XXXX 00
1140 XXXX 00
1145 PELTEER Valentine 889-6848 +0
1147 XXXX 00
1148 FOSTER Shirley B 885-7660
1156 XXXX 00
1164 XXXX 00
1172 XXXX 00
1175 BUCHANAN Myrtle 889-7886 6
1180 XXXX 00
★ 0 BUS 30 RES 3 NEW

## TIAMA (86) 92307 APPLE VALLEY

17024 BROWN Paul G 240-5990 +0
17035 MARTIN Ernest R 240-3038 8
17047 VANDESOMPELE J C 247-3536 6
17053 DOTY Mark A 247-4998 9
★ 0 BUS 4 RES 1 NEW

## +TIARA AV (90) 92346 HIGHLAND

7264 LGOAN Kim 862-1657 +0
LOGAN Richard A 862-1657 +0
★ 0 BUS 2 RES 2 NEW

## TIARA AV S 91761 ONTARIO

2512 MALOOLY Richard 947-9043 +0
SHROPSHIRE Forrest 947-9203 9
2517 PHILLIPS Kim 923-2497 +0
2518 OBERG Grantley K Jr 923-1102 9
OBERG Karen 923-1102
DELUNA Javier 923-0723 +0
2523 NAKAWAKI Glenn K 923-2742 +0
2524 NAKAWAKI Sharon 923-2742 +0
2529 XXXX 00
2530 XXXX 00
2534 LEVERS Jas 947-1688
LEVERS Jas B 947-1688
LEVERS Jean 947-1688 8
KETCHAM Pam 947-3513 8
2535 XXXX 00
2541 XXXX 00
2542 XXXX 00
2603 XXXX 00
2604 XXXX 00
2613 NELSON L 00
2614 XXXX 00
2620 CAMPOS Pablo A 923-8673 +0
2621 XXXX 00
2622 AUD Debra 947-9443 6
2625 CHENG Henry 947-6329 3
2626 XXXX 00
2631 WILKERSON Ronald 923-8305 +0
2635 XXXX 00
2636 REARTE Beatrice 947-7840 7
2642 HALEN Howard T 947-5266 1
2647 XXXX 00
★ 0 BUS 30 RES 7 NEW

## TIBBOT (81) 92376 RIALTO

759 LAWRENCE G D 874-5600 2
771 MOORE Richard L 820-9939 9
778 XXXX 00
806 GIBBONS Brenda 875-7253
GIBBONS Evan 875-7253
820 JACQUES Sonja 874-0295
JACQUES Theodore 874-0295
834 FISHER Jennie 820-4910
FISHER Robert 820-4910 9
848 POWELL Mary L 874-1520 +0
862 XXXX 00
★ 0 BUS 11 RES 1 NEW

## TIEFORT DR (87) 92310 FORT IRWIN

3907 POUX Robert J 386-1327 +0
3908 DYSON Gregory W 386-1260 9
3909 SHADELL Michael J 386-1301 9
3910 XXXX 00
3911 PATTIS John S 386-1212 +0
3914 XXXX 00
3916 DOYNE William G 386-2416 +0
3917 ROBINSON Michl Maj 386-1774 +0
3918 WEBSTER Horace F 386-1276 9
★ 0 BUS 9 RES 4 NEW

## TIERRA CIMA S 91789 WALNUT

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## TIERRA LOMA DR 91765 DIAMOND BAR

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## TIERRA LUNA S 91789 WALNUT

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## TIERRA SIESTA S 91789 WALNUT

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## TIFFANI PL (83) 92346 HIGHLAND

3405 LAMBERT A DR 864-6065 6
3434 CANNADY Bruce 862-6865 9
CANNADY Sandra 862-6865
3465 CREWS Jas V 862-6327 3
★ 0 BUS 4 RES 0 NEW

## TIFFAN WAY (81) 91711 CLAREMONT

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

## TIFFANY CIR 91786 UPLAND

1262 EICKHOFF Duane 985-9565
EICKHOFF Lois 985-9565
1263 HUSS Wm 962-8098
1271 XXXX 00
1275 ERWIN John 985-4897 1
★ 0 BUS 5 RES 0 NEW

## TIFFANY CT S 91762 ONTARIO

1704 XXXX 00
1705 KELLY David R 391-2252 9
1711 SANDERS Earl E 986-0136 3
1717 RAY Dennis 983-8582 7
1723 XXXX 00
1728 JACKSON Terry 983-6047 +0
1729 MENA Ernest Jr 983-2451 3
1734 MCGOWEN Emil 986-5001 3
★ 0 BUS 8 RES 1 NEW

## TIFFANY PL S (85) 91762 ONTARIO

2213 MCCORT Michael 983-8924 7
2219 BRYANT Lionel F 988-0072 5
2220 XXXX 00
2237 SOTO Jose 391-2854 +0
2238 DUBYAK Peter W 984-3996 5
★ 0 BUS 5 RES 1 NEW

## TIGER LILLY DR 92314 BIG BEAR CITY

308 XXXX 00
309 XXXX 00
313 SMITH James D 585-2492 +0
316 XXXX 00
340 XXXX 00
361 WARNER Kenneth E 585-1528 +0
389 XXXX 00
393 XXXX 00
403 XXXX 00
411 XXXX 00
447 FELLMAN Lori 585-2559 +0
★ 0 BUS 11 RES 3 NEW

## TIGER TAIL RD 92307 APPLE VALLEY

14601 SGRO Anthony Lt Col 242-3272
14604 XXXX 00
14606 DEBORD Ted L 242-3374
14630 VANDYCK Wm 242-3018
14638 LANGE Billie 242-5834
LANGE Christopher 242-5834
14646 XXXX 00
14652 XXXX 00
14663 NEWSOM Noble 242-2224
14678 SMITH Deborah 242-2305 1
SMITH Steven 242-2305
14694 XXXX 00
14695 NATIONS George O 242-3316
14698 WILSON Richard E 242-2166
14730 XXXX 00
14750 NASSIF Fred DR 242-2712
14770 XXXX 00
14790 SIEMUND Roland F 242-4859 1
14795 KENNEDY Robert C 242-5333 7
★ 0 BUS 19 RES 0 NEW

## TILFORD WAY 92252 JOSHUA TREE

63300 XXXX 00
63390 XXXX 00
63413 XXXX 00
63533 TILFORD Michael W 366-2832 9
63624 TILFORD C 366-2198
★ 0 BUS 5 RES 0 NEW

## TIMBERLANE AV 92345 HESPERIA

9233 XXXX 00
9246 XXXX 00
9280 XXXX 00
9323 XXXX 00
9495 SURFACE Ralph 244-2227
9501 DUDSCHUS Charles P 244-7345 1
9502 XXXX 00
9506 MCLAUGHLIN Leonard 244-9433 9
9510 JARVIS Chris 948-4334
JARVIS Marajean 948-4334
9511 FOSTER Edward 244-5807 1
9535 SCHIEFFER Wm 244-8171 6
9540 XXXX 00
9564 SHORTER S V 244-8256
9650 SMITH Oras O 244-1512
9670 XXXX 00
9730 XXXX 00
9733 XXXX 00
9762 KING Donald E 244-9641
9784 XXXX 00
9790 LEWIS W Freeman 244-9081
9840 KIRK George E 948-4315 9
9851 MAYER George F 244-6723
9920 ZASTROW Lyle 244-9635 1
9946 SMITH C M 949-1211 7
9998 DANE Ronald 244-8531
10037 FINE Raymond M 244-7130
10174 LUNDIE Robert H 244-4992 7
10224 XXXX 00
10309 BARRY Mark A 949-6816 +0
10324 HOPKINS K 244-7664
HOPKINS Mark 244-7664
10376 XXXX 00
10384 BOUCHER Y F 244-6829 9
10411 XXXX 00
10416 MCCORMACK Merton L 945-1251 3
10455 WULSTEIN Daniel 244-0660 8
★ 0 BUS 37 RES 1 NEW

## TIMBERLINE DR 92397 WRIGHTWOOD

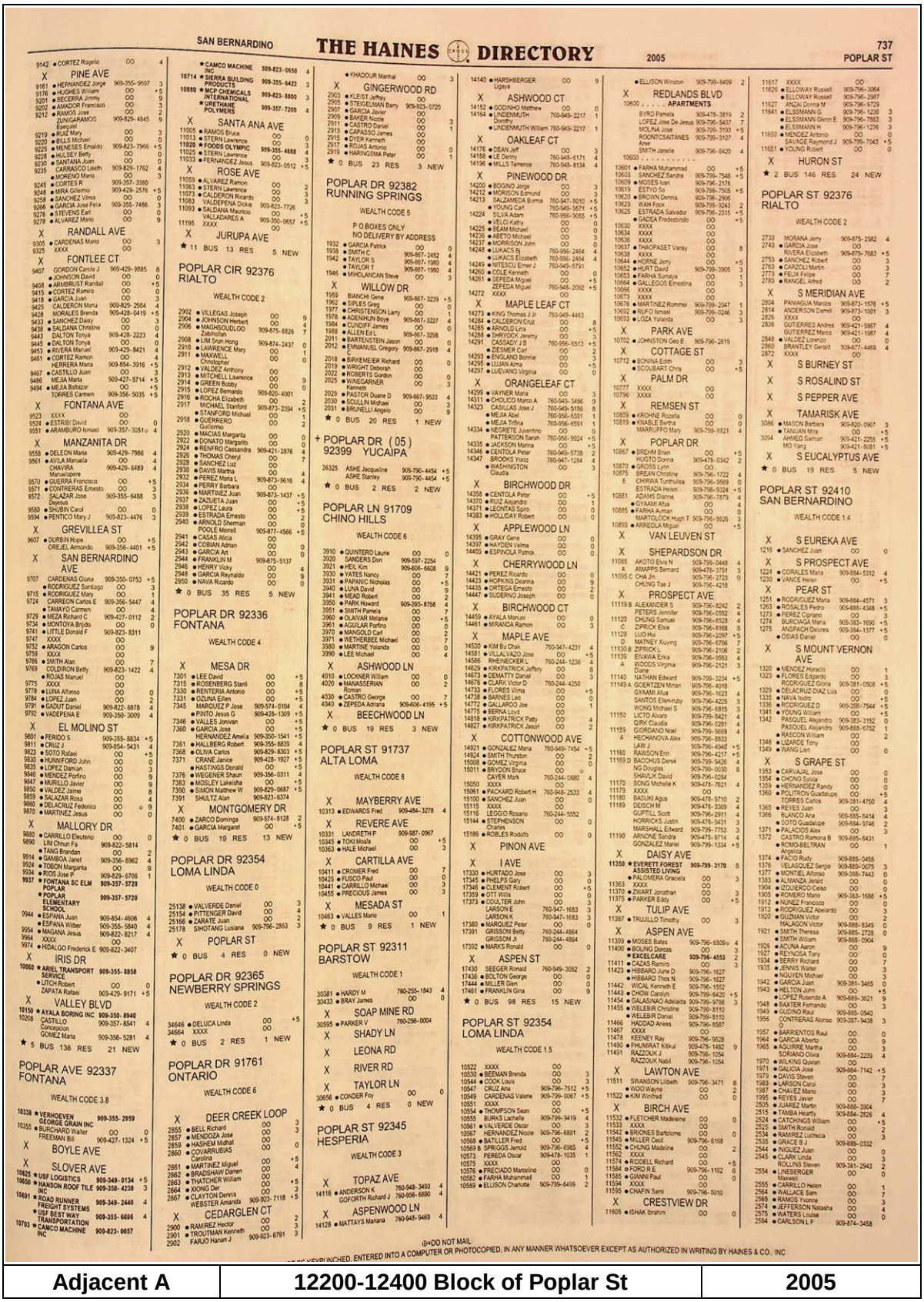
26627 CAMPHUIS Daniel W 249-5569 1
26632 LEWIS Thomas V 249-5154 6
26658 ROBBINS G 249-5620 9
26669 CLEARY James W DR 249-3303
26688 MCFARLAND Mark 249-6412
26711 XXXX 00
★ 0 BUS 6 RES 0 NEW

## TIMBERLINE LN (87) 91730 CUCAMONGA

9120 APARTMENTS
BOZARTH Greg 980-4029 8
CARSON Richard 987-2430 8
FISCHER Janna 944-1344 +0
HEAD Kenneth D 980-7134 9
LABUDA Michael 980-9934 9
9120
9133 RIZZO Philip 989-9273 7
SCALETTA Tom 944-7257
VELTHUIS Judee 944-7257 9
VELTHUIS Marco 944-7257
9134 APARTMENTS
JACKSON Roger 980-4947 8
LARSEN Bryan 944-9089 +0
LARSEN Erin 944-9089 +0
LORENZEN Matt 944-7422 9
SMITH Christine 945-1569 +0
TOMASELLI Ralph 941-1074 +0
9134
9138 APARTMENTS
ADAMS Richard C 945-9442 9
MARQUEZ Vickie 944-7787 +0
MASON Steve 944-7787 +0
MILLS K 945-9480 +0
NUGEN Bary 980-5223 +0
9138
9141 DERR Thos F 945-1619 8
DOMITROVICH Joe 989-7622 7
ROBERTSON Duncan 944-1558 +0
WILLIS Bob 945-9489 9
9146 AHN Jeong Bai 945-1114 +0
9167 APARTMENTS
9168 CARDENAS John 944-6412 +0
MCMAHON Kenneth 945-1592 9
NOBLE L 941-9498 +0
PINON Sylvia 945-5500 9
WALTER Terri 980-6517 9
9168
9190 APARTMENTS
BROWN Randy 941-0511 +0
MILLIGAN E F 944-7420 9
MOXLEY Robt 987-3381 9
SANCHEZ Bernardo 945-9085 +0
WEBSTER Susan 987-3023 +0

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| Subject | 8800-8900 Block of Three Flags Rd | 1990 |
|---|---|---|



SAN BERNARDINO THE HAINES DIRECTORY 2005 737 POPLAR ST

PINE AVE
RANDALL AVE
FONTLEE CT
MANZANITA DR
FONTANA AVE
SAN BERNARDINO AVE
GREVILLEA ST
EL MOLINO ST
MALLORY DR
VALLEY BLVD
IRIS DR
BOYLE AVE
SLOVER AVE

POPLAR AVE 92337 FONTANA
WEALTH CODE 3.8

POPLAR AVE 92376 RIALTO
WEALTH CODE 2

POPLAR ST 92376 RIALTO
WEALTH CODE 2

POPLAR CIR 92376 RIALTO
WEALTH CODE 2

POPLAR DR 92336 FONTANA
WEALTH CODE 4

POPLAR DR 92354 LOMA LINDA
WEALTH CODE 0

POPLAR DR 92365 NEWBERRY SPRINGS
WEALTH CODE 2

POPLAR DR 91761 ONTARIO
WEALTH CODE 6

DEER CREEK LOOP
CEDARGLEN CT

POPLAR DR 92382 RUNNING SPRINGS
WEALTH CODE 5
P O BOXES ONLY
NO DELIVERY BY ADDRESS

GINGERWOOD RD
SANTA ANA AVE
ROSE AVE
JURUPA AVE

POPLAR DR (05) 92399 YUCAIPA

POPLAR LN 91709 CHINO HILLS
WEALTH CODE 6

MESA DR
MONTGOMERY DR

POPLAR ST 91737 ALTA LOMA
WEALTH CODE 8

MAYBERRY AVE
REVERE AVE
CARTILLA AVE
MESADA ST
POPLAR ST
SOAP MINE RD

POPLAR ST 92311 BARSTOW
WEALTH CODE 1

SHADY LN
LEONA RD
RIVER RD
TAYLOR LN

POPLAR ST 92345 HESPERIA
WEALTH CODE 3

TOPAZ AVE
ASPENWOOD LN

ASHWOOD CT
OAKLEAF CT
PINEWOOD DR
MAPLE LEAF CT
ORANGELEAF CT
BIRCHWOOD DR
APPLEWOOD LN
CHERRYWOOD LN
MAPLE AVE
ASHWOOD LN
BEECHWOOD LN
COTTONWOOD AVE
I AVE
ASPEN ST

POPLAR ST 92354 LOMA LINDA
WEALTH CODE 1.5

REDLANDS BLVD
APARTMENTS
LAWTON AVE
BIRCH AVE
CRESTVIEW DR

S SANTA ANA AVE
S MERIDIAN AVE
PARK AVE
COTTAGE ST
PALM DR
REMSEN ST
VAN LEUVEN ST
SHEPARDSON DR
PROSPECT AVE
PEAR ST
MOUNT VERNON AVE
GRAPE ST
HURON ST

POPLAR ST 92376 RIALTO
WEALTH CODE 2

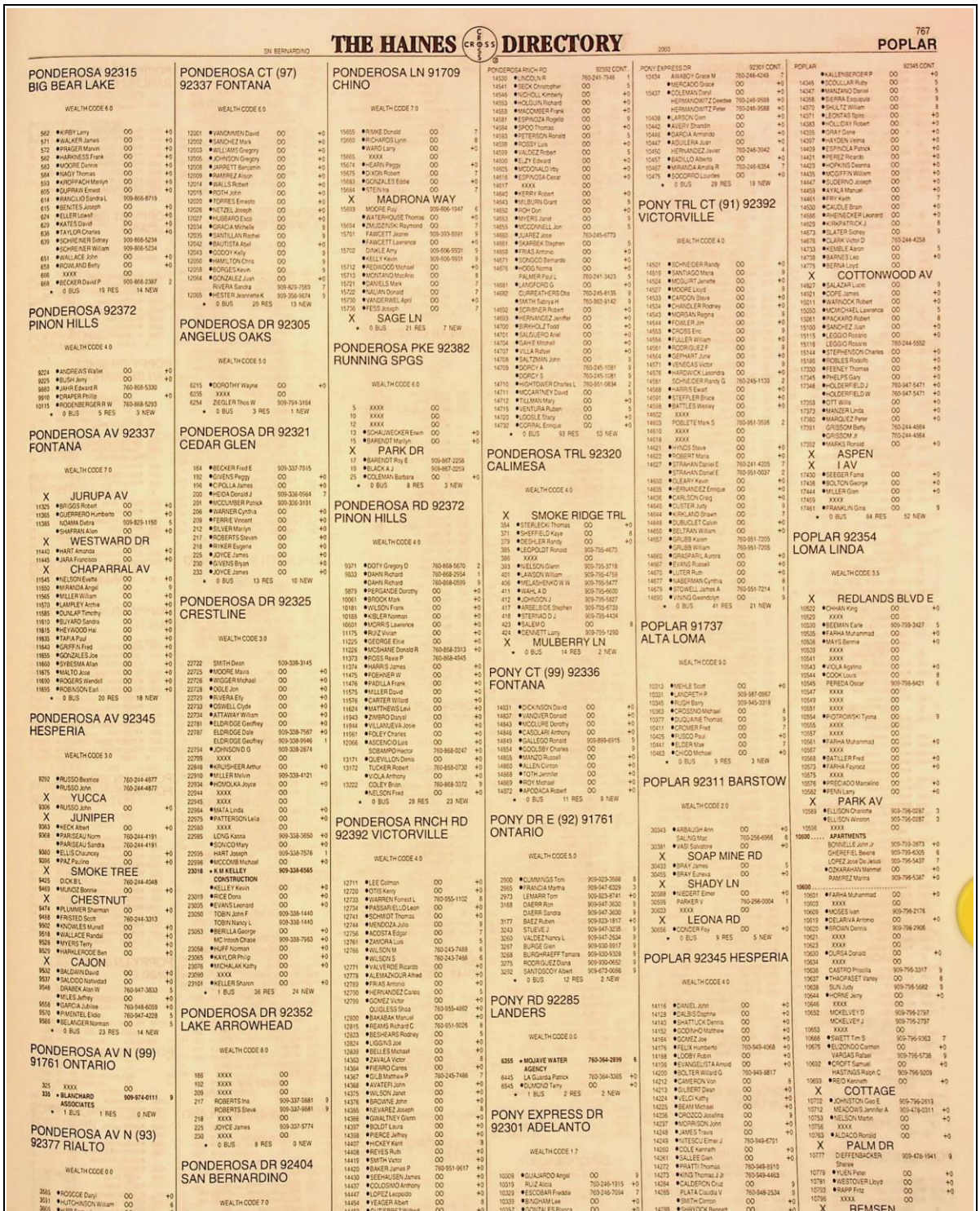
S BURNEY ST
S ROSALIND ST
S PEPPER AVE
TAMARISK AVE

POPLAR ST 92410 SAN BERNARDINO
WEALTH CODE 1.4

S EUREKA AVE
S PROSPECT AVE
PEAR ST
MOUNT VERNON AVE
GRAPE ST

⊕=DO NOT MAIL
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| Adjacent A | 12200-12400 Block of Poplar St | 2005 |
|---|---|---|



SN BERNARDINO THE HAINES CROSS DIRECTORY 2000 767 POPLAR

PONDEROSA 92315 BIG BEAR LAKE
WEALTH CODE 6 0
562 •KIRBY Larry OO +0
571 •WALKER James OO +0
572 •PRAGER Marvin OO +0
582 •HARKNESS Frank OO +0
583 •MOORE Dennis OO +0
584 •NAGY Thomas OO +0
593 •KROPPACH Marilyn OO +0
605 •QUIRAN Ernest OO +0
614 •RANCLIO Sandra L 909-866-8719
615 •BENITES Joseph OO +0
624 •ELLER Lowell OO +0
629 •KATES David OO +0
636 •TAYLOR Charles OO +0
639 •SCHREINER Sidney 909-866-5234
•SCHREINER William 909-866-5234
651 •WALLACE John OO +0
653 •ROWLAND Betty OO +0
666 XXXX OO
668 •BECKER David P 909-866-2387 2
• 0 BUS 19 RES 14 NEW

PONDEROSA 92372 PINON HILLS
WEALTH CODE 4 0
9224 •ANDREWS Walter OO +0
9225 •BUSH Jerry OO +0
9680 •JAHR Edward R 760-868-5330
9910 •DRAPER Philip OO +0
10915 •RODENBERGER R W 760-868-5293
• 0 BUS 5 RES 3 NEW

PONDEROSA AV 92337 FONTANA
WEALTH CODE 7 0
X JURUPA AV
11325 •BRIGGS Robert OO +0
11365 •GUERRERO Humberto OO +0
11385 ADMIN Debra 909-829-1150 5
•SHAFRAN Allen OO +0
X WESTWARD DR
11440 •HART Amanda OO +0
11445 •JARA Francisco OO +0
X CHAPARRAL AV
11545 •NELSON Evette OO +0
11550 •MIRANDA Angel OO 9
11565 •MILLER William OO +0
11570 •LAMPLEY Archie OO +0
11585 •DUNLAP Timothy OO +0
11610 •BUYARD Sandra OO +0
11615 •HEYWOOD Hal OO +0
11635 •TAPIA Paul OO +0
11640 •GRIFFIN Fred OO +0
11655 •GONZALES Joe OO +0
11660 •SYBESMA Allan OO +0
11675 •MALTO Jose OO +0
11690 •ROGERS Wendell OO +0
11695 •ROBINSON Earl OO +0
• 0 BUS 20 RES 18 NEW

PONDEROSA AV 92345 HESPERIA
WEALTH CODE 3 0
9292 •RUSSO Beatrice 760-244-4877
•RUSSO John 760-244-4877
X YUCCA
9306 •RUSSO John OO +0
X JUNIPER
9363 •KECK Albert OO +0
9368 •PARISEAU Norm 760-244-4191
•PARISEAU Sandra 760-244-4191
9380 •ELLIS Chauncey OO +0
9396 •PAZ Paulino OO +0
X SMOKE TREE
9425 DICK B L 760-244-4048
9469 •MUNOZ Bonnie OO +0
X CHESTNUT
9474 •PLUMMER Sherman OO +0
9488 •FRISTED Scott 760-244-3313
9502 •KNOWLES Murrell OO +0
9518 •WALLACE Randal OO +0
9528 •MYERS Terry OO +0
9529 •HARKLERODE Ben OO +0
X CAJON
9532 •BALDWIN David OO +0
9537 •SALCIDO Natividad OO +0
9546 DRANEK Alan W 760-947-3833 5
•MILES Jeffrey OO +0
9558 •GARCIA Jubilee 760-948-6059 +0
9570 •PIMENTEL Eldo 760-947-4228 5
9586 •BELANGER Norman OO 5
• 0 BUS 23 RES 14 NEW

PONDEROSA AV N (99) 91761 ONTARIO
325 XXXX OO
335 •BLANCHARD ASSOCIATES 909-974-0111 9
• 1 BUS 1 RES 0 NEW

PONDEROSA AV N (93) 92377 RIALTO
WEALTH CODE 0 0
3581 •ROSCOE Daryl OO +0
3591 •HUTCHINSON William OO 6
3601 •HIPP Samuel OO 7
3615 •JONES Jerry OO +0
3625 •COLES Benjamin OO +0
3635 •MORRIS Scott OO 9
3645 •PIMENTAL John OO +0
3653 •WHITE John OO +0
3654 •RAWLE John OO +0
3770 •BENCITO Jessie OO +0
3792 CHAMBERS Betty 909-355-4832 7
•CHAMBERS Bryan 909-355-4832 7
• 0 BUS 12 RES 7 NEW

PONDEROSA CT (97) 92337 FONTANA
WEALTH CODE 6 0
12001 •VANDIVIEN David OO +0
12003 •SANCHEZ Mark OO +0
12003 •WILLIAMS Gregory OO +0
12005 •JOHNSON Gregory OO +0
12009 •JARRETT Benjamin OO +0
12009 •RAMIREZ Alison OO +0
12014 •WALLS Robert OO +0
12015 •ROTH John OO +0
12035 •TORRES Ernesto OO +0
12026 •NETZEL Joseph OO +0
12027 •HUBBARD Esco OO +0
12034 •GRACIA Michelle OO 9
12035 •SANTILLAN Rachel OO 9
12042 •BAUTISTA Abel OO +0
12043 •GODOY Kelly OO 9
12050 •HAMILTON Chris OO 9
12058 •BORGES Kevin OO 9
12064 •GONZALEZ Juan OO +0
RIVERA Sandra 909-829-7569 7
12065 •HESTER Jeannette K 909-356-9674 9
• 0 BUS 20 RES 13 NEW

PONDEROSA DR 92305 ANGELUS OAKS
WEALTH CODE 5 0
6215 •DOROTHY Wayne OO +0
6235 XXXX OO
6254 ZIEGLER Thos W 909-794-3164
• 0 BUS 3 RES 1 NEW

PONDEROSA DR 92321 CEDAR GLEN
164 •BECKER Fred E 909-337-7915
192 •GIVENS Peggy OO +0
196 •CIPOLLA James OO +0
200 •HEIDA Donald J 909-336-0564 7
201 •MCCUMBER Patrick 909-336-3191
206 •WARNER Cynthia OO +0
207 •FERRIE Vincent OO +0
212 •SILVER Marilyn OO +0
217 •ROBERTS Steven OO +0
218 •RIKER Eugene OO +0
225 •JOYCE James OO +0
230 •GIVENS Bryan OO +0
233 •JOYCE James OO +0
• 0 BUS 13 RES 10 NEW

PONDEROSA DR 92325 CRESTLINE
WEALTH CODE 3 0
22722 SMITH Dean 909-338-3145
22725 •MOORE Mavis OO +0
22726 •MOORE Michael OO +0
22728 •OGLE Jon OO +0
22729 •RIVERA Elly OO +0
22733 •OSWELL Clyde OO +0
22734 •ATTAWAY William OO +0
22781 •ELDRIDGE Geoffrey OO +0
22787 ELDRIDGE Dale 909-338-7567 +0
ELDRIDGE Geoffrey 909-338-9946 1
22794 •JOHNSON D G 909-338-2874
22799 XXXX OO
22846 •KRUISHEER Arthur OO +0
22910 •MILLER Melvin 909-338-4121
22934 •NOVIOLA Joyce OO +0
22944 XXXX OO
22945 XXXX OO
22964 •MATA Linda OO +0
22975 •PATTERSON Leila OO +0
22980 XXXX OO
22985 LONG Kassa 909-338-3650 +0
•SCHICO Mary OO +0
22995 HART Joseph 909-338-7576 1
22998 •MCCOMB Michael OO +0
23018 • K M KELLEY CONSTRUCTION 909-338-6565
•KELLEY Kevin OO +0
23019 •RICE Dona OO +0
23035 •EVANS Leonard OO +0
23050 TOBIN John F 909-338-1440
TOBIN Nancy L 909-338-1440
23052 •BERLLA George OO +0
MC Intosh Chase 909-338-7563 +0
23056 •HUFF Norman OO +0
23065 •KAYLOR Philip OO +0
23076 •MICHALAK Kathy OO +0
23090 XXXX OO
23101 •KELLER Sharon OO +0
• 1 BUS 36 RES 24 NEW

PONDEROSA DR 92352 LAKE ARROWHEAD
WEALTH CODE 8 0
186 XXXX OO
192 XXXX OO
209 XXXX OO
217 ROBERTS Ina 909-337-0681 9
ROBERTS Steve 909-337-0681 9
218 XXXX OO
225 JOYCE James 909-337-5774
230 XXXX OO
• 0 BUS 8 RES 0 NEW

PONDEROSA DR 92404 SAN BERNARDINO
WEALTH CODE 7 0
1105 •PEARSON Nancy OO +0
1113 •MULDOON C OO +0
1114 •ZELLER Robert OO +0
1122 •DORNEY Theodore OO +0
1127 •GROVENALD Jack 909-883-0360
1155 •SHULTZ Jon OO +0
1200 •STEPHENS Dick 909-886-8737
•STEPHENS Sheila 909-886-8737
• 0 BUS 8 RES 5 NEW

PONDEROSA LN 91709 CHINO
WEALTH CODE 7 0
15655 •RUNKE Donald OO 7
15660 •RICHARDS Lynn OO 8
•WARD Larry OO +0
15665 XXXX OO
15674 •HEARN Peggy OO +0
15675 •DIXON Robert OO +0
15683 •GONZALES Eddie OO +0
15684 •STEIN Ira OO 7
X MADRONA WAY
15693 MOORE Ray 909-606-1947 6
•WATERHOUSE Thomas OO +0
15694 •ZMUDNOKI Raymond OO 7
15701 FAWCETT Jeanne 909-393-8991 9
•FAWCETT Lawrence OO +0
15702 DINKLE Amy 909-606-9931 9
•KELLY Kevin 909-606-9931 9
15712 •REDWOOD Michael OO +0
15713 •MONTANO MacAno OO 8
15721 •DANIELS Mark OO 7
15722 •ALLMAN Donald OO 7
15730 •VANDERWEL April OO +0
15736 •FESS Joseph OO 7
X SAGE LN
• 0 BUS 21 RES 7 NEW

PONDEROSA PKE 92382 RUNNING SPGS
WEALTH CODE 6 0
5 XXXX OO
10 XXXX OO
12 XXXX OO
13 •SCHAUWECKER Erwin OO +0
15 •BARENDT Marilyn OO +0
X PARK DR
17 •BARENDT Roy E 909-867-2258
19 •BLACK A J 909-867-2259
25 •COLEMAN Barbara OO +0
• 0 BUS 8 RES 3 NEW

PONDEROSA RD 92372 PINON HILLS
WEALTH CODE 4 0
9371 •DOTY Gregory D 760-868-5670 2
9933 •DAHN Richard 760-868-2994 1
•DAHN Richard 760-868-0599 9
9879 •FERGANDE Dorothy OO +0
10061 •BROOK Mark OO +0
10161 •WILSON Frank OO +0
10188 •KISLER Norman OO +0
10601 •MORRIS Lawrence OO +0
11175 •RUIZ Vivian OO +0
11225 •GEORGE Elsie OO +0
11226 •MOSHANE Donald R 760-868-2313 +0
11373 •ROSS Reese P 760-868-4945
11374 •HARRIS James OO +0
11475 •FOEHNER W OO +0
11476 •PADILLA Frank OO +0
11575 •MILLER David OO +0
11576 •CARTER Willard OO +0
11624 •MATTHEWS Lexi OO +0
11943 •ZIMPRO Donyal OO +0
11944 •VILLANUEVA Jose OO +0
11951 •FOLEY Charles OO +0
12066 •ASCENCIO Luis OO +0
SAMPOPHector 760-868-0247 +0
13171 •QUEVILLON Denis OO +0
13172 TUCKER Robert 760-868-0730 +0
•VIOLA Anthony OO +0
13222 •COLEY Brian 760-868-3372 7
•NELSON Fred OO +0
• 0 BUS 28 RES 23 NEW

PONDEROSA RNCH RD 92392 VICTORVILLE
WEALTH CODE 4 0
12711 •LEE Colman OO +0
12720 •OTIS Kerry OO +0
12733 •WARREN Forrest L 760-955-1102 8
12734 •PASSARELLO Leon OO +0
12741 •SCHMIDT Thomas OO +0
12744 •MENDOZA Julio OO 9
12756 •ACOSTA Edgar OO 7
12761 •ZAMORA Luis OO 5
12766 •WILSON M 760-243-7488 6
•WILSON S 760-243-7488 6
12771 •CARDE Ricardo OO +0
12778 •ALEMAZKOUR Alfred OO +0
12789 •FRIAS Antonio OO +0
12790 •HERNANDEZ Carlos OO 5
12799 •GOMEZ Victor OO +0
QUIGLESS Shoa 760-955-4862 +0
12800 •BAKABAK Manuel OO +0
12815 •REAMS Richard G 760-951-9026 6
12833 •BESHEARS Rodney OO 5
12824 •LIGGINS Joe OO +0
12839 •BELLES Michael OO +0
14363 •ZAVALA Victor OO 8
14364 •PIERRO Carlos OO +0
14367 •GILB Matthew P 760-245-7486 7
14368 •AVATEFI John OO +0
14375 •WILSON Janet OO +0
14376 •BROWNE John OO +0
14385 •NEVAREZ Joseph OO 8
14366 •GWALTNEY Glenn OO +0
14397 •ROLDT Laura OO +0
14398 •PIERCE Jeffrey OO +0
14407 •HICKEY Kent OO 8
14408 •REYES Ruth OO +0
14419 •RUIZ Victor OO +0
14420 •BAKER James P 760-951-9617 +0
14430 •SEEHAUSEN James OO +0
14437 •COLOSINO Anthony OO +0
14447 •LOPEZ Leopoldo OO +0
14454 •YEAGER Albert OO 8
14459 •GUTIERREZ Wilfred OO +0
14471 •MARES Frank 760-241-6331 7
14478 •ALCANTARA T OO +0
14488 •LIVINGSTON C OO 9
14490 •MORGAN Gurtrenele OO +0
14500 •SCRIBNER Robert OO +0
14510 •NAUGHTON D C 760-245-4643 +0
14519 •CHRISTIANSON Sheri OO +0
14520 •ROWE Corous 760-245-0266
•ROWE Edna 760-245-0266
14527 •CAMARGO Comello OO 5

PONDEROSA RNCH RD 92392 CONT
14530 •LINCOLN R 760-241-7948 1
14541 •BECK Christopher OO +0
14546 •NICHOLL Kimberly OO +0
14553 •HOLGUIN Richard OO +0
14559 •MACOMBER Frank OO +0
14581 •ESPINOZA Rogelio OO 9
14584 •SPOO Thomas OO +0
14593 •PETERSON Ronald OO 5
14598 •ROSSI Luis OO +0
14599 •SALDEZ Robert OO 5
14600 •ELZY Edward OO +0
14625 •MCDONALD Roy OO +0
14616 •ESPINOSA Cesar OO +0
14617 XXXX OO
14640 •KERRY Robert OO +0
14643 •KILBURN Grant OO +0
14650 •ROH Don OO +0
14653 •MYERS Janet OO 9
14655 •MCCONNELL Jon OO 5
14660 •SUAREZ Jose 760-245-6773
14661 •SKARBEK Stephen OO 5
14668 •FRIAS Antonio OO +0
14671 •SONGCO Bernardo OO +0
14676 •HOGG Norma OO 8
PALMER Paul L 760-241-3423 5
14681 •LANGFORD G OO +0
14682 CURREATHERS Otis 760-245-8135 9
•SMITH Sabrya H 760-962-9142 9
14692 •SCRIBNER Robert OO +0
14693 •HERNANDEZ Jenifer OO +0
14700 •BIRKHOLT Todd OO +0
14701 •SALGUERO Ariel OO +0
14704 •SAHIE Mitchell OO +0
14707 •VILLA Rafael OO +0
14708 •SALTZMAN John OO 9
14709 •SORCY A 760-245-1081 9
•SORCY S 760-245-1081 9
14710 •HIGHTOWER Charles L 760-951-0634 9
14711 •MCCARTNEY David OO 9
14712 •TILLMAN Mary OO +0
14715 •VENTURA Ruben OO 5
14720 •LOGDLE Stacy OO +0
14732 •CORRAL Enrique OO +0
• 0 BUS 53 RES 53 NEW

PONDEROSA TRL 92320 CALIMESA
WEALTH CODE 4 0
X SMOKE RIDGE TRL
354 •STERLECKI Thomas OO +0
371 •SHEFFIELD Kaye OO 8
379 •DESHLER Randy OO +0
385 •LEOPOLDT Ronald 909-795-4670
386 XXXX OO
393 •NELSON Glenn 909-795-3718
401 •LAWSON William 909-795-4759
406 •MELASHENKO W W 909-795-5477
411 •BARK, A D 909-795-6600
412 •JOHNSON J 909-795-5827
417 •ARGELBIDE Stephen 909-795-6739
418 •STERNAD D J 909-795-4434
423 •SALEMO OO 8
424 •DENNETT Larry 909-795-1290
X MULBERRY LN
• 0 BUS 14 RES 2 NEW

PONY CT (99) 92336 FONTANA
14831 •DICKINSON David OO +0
14837 •VANDIVER Donald OO +0
14843 •MCCLURE Dorothy OO +0
14846 •CASOLARI Anthony OO +0
14849 •GALLEGO Ronald 909-899-6915 9
14854 •COOLSBY Charles OO 9
14855 •MANZO Russell OO +0
14860 •ALLEN Clinton OO +0
14868 •TOTH Jennifer OO +0
14869 •ROY Michael OO +0
14872 •APODACA Robert OO +0
• 0 BUS 11 RES 9 NEW

PONY DR E (92) 91761 ONTARIO
WEALTH CODE 5 0
2900 •CUMMINGS Tom 909-923-3566 8
2965 •RANDA Myrtha 909-947-6329 3
2973 LEMARR Tom 909-923-8741 +0
3168 DAERR Ron 909-947-3630 9
DAERR Sandra 909-947-3630 9
3177 BAEZ Ruben 909-923-1817 +0
3243 STUEVE J 909-947-3235 9
3260 VALDEZ Nancy L 909-947-2634 9
3267 BURGE Glen 909-930-9917 9
3268 BURDHAREFF Tamara 909-930-9328 9
3275 RODRIGUEZ Diana 909-930-0652 9
3292 SANTOSCOY Albert 909-673-0096 9
• 0 BUS 12 RES 2 NEW

PONY RD 92285 LANDERS
WEALTH CODE 0 0
6355 • MOJAVE WATER AGENCY 760-364-2899 6
6445 LA Guarda Patrick 760-364-3385 +0
6545 •DUMOND Terry OO +0
• 1 BUS 2 RES 2 NEW

PONY EXPRESS DR 92301 ADELANTO
WEALTH CODE 1 7
10309 •GUAJARDO Angel OO 9
10319 RUIZ Alicia 760-246-1915 +0
10329 •ESCOBAR Freddie 760-246-7094 7
10339 •SINGHAM Lee OO +0
10357 •GONZALES Blanca OO +0
10367 •CEDANO David OO 8
10400 •GALIANA Javier OO +0
10402 •SHUBIN Nora OO +0
10406 •SILVESTRE Rafael OO 9
10410 •NEWPORT Donald OO +0
10414 •BEARD Toy OO +0
10417 •CRUZ Juan OO +0
10418 •FELIX Modesta 760-246-7035 +0
10422 XXXX OO
10430 •FERGUSON Stewart 760-246-7274

PONY EXPRESS DR 92301 CONT
10434 AWABDY Grace M 760-246-4249 7
•MERCADO Grace OO +0
10437 •COLEMAN Daryl OO +0
HERMANOWITZ Deedee 760-245-9588 +0
HERMANOWITZ Peter 760-245-9588 +0
10438 •LARSON Glen OO +0
10442 •AVERY Shandin OO +0
10446 •GARCIA Armando OO +0
10447 •AGUILERA Juan OO +0
10450 HERNANDEZ Javier 760-246-3942 4
10457 •BADILLO Alberto OO +0
10467 •MIRANDA Amalia R 760-246-8354 7
10475 •SOCORRO Lourdes OO +0
• 0 BUS 28 RES 19 NEW

PONY TRL CT (91) 92392 VICTORVILLE
WEALTH CODE 4 0
14501 •SCHNEIDER Randy OO +0
14519 •SANTIAGO Maria OO 9
14524 •MOLINA Jeanette OO +0
14527 •MOORE Lloyd OO 9
14533 •CARDON Steve OO +0
14534 •CHANDLER Rodney OO +0
14535 •MORGAN Regina OO 9
14544 •FOWLER Jim OO +0
14553 •CROSS Eric OO 9
14554 •FULLER William OO +0
14561 •RODRIGUEZ F OO 9
14564 •SEPHART June OO +0
14571 •VENEGAS Victor OO 9
14576 •HARDWICK Laundra OO +0
14581 SCHNEIDER Randy G 760-245-1139 2
14588 •HARRIS Ewart OO +0
14591 •STEFFLER Bruce OO +0
14598 •BATTLES Wesley OO +0
14602 XXXX OO
14603 POBLETE Mark S 760-951-3596 2
14610 XXXX OO
14618 XXXX OO
14621 •HYNDS Steve OO +0
14622 •ROBERT Maria OO +0
14627 •STRAHN Daniel E 760-241-4205 7
•STRAHN Daniel E 760-951-0037 2
14630 •CLEARY Kevin OO +0
14635 •HERNANDEZ Enrique OO +0
14636 •CASH Craig OO +0
14643 •CUSTER Judy OO 9
14644 •KIRKLAND Shawn OO 7
14648 •DUBOULET Calvin OO +0
14650 •BELTRAN William OO +0
14657 •GRUBB Karen 760-951-7205
•GRUBB William 760-951-7205
14660 •GRASPARIL Aurora OO +0
14667 •EVANS Russell OO +0
14670 •LUTER Ruth OO +0
14677 •HABERMAN Cynthia OO 8
14678 •STOWELL James A 760-951-7214 1
14690 •VINING Gwendolyn OO 9
• 0 BUS 41 RES 21 NEW

POPLAR 91737 ALTA LOMA
WEALTH CODE 9 0
10313 •MEHLE Scott OO +0
10331 •ANDREYEV P 909-987-0667
10345 •RUGH Barry 909-945-3318
10363 •CROSSNO Michael OO 8
10377 •DUQUAINE Thomas OO 9
10411 •CROMER Fred OO 7
10425 •RUSCO Paul OO +0
10441 •ELDER Mae OO 7
10463 •CHICO Michael OO +0
• 0 BUS 9 RES 3 NEW

POPLAR 92311 BARSTOW
WEALTH CODE 2 0
30343 •ARBAUGH Ann OO +0
SALING Mac 760-256-6966 6
30381 •VASI Salvatore OO +0
X SOAP MINE RD
30433 •BRAY James OO 5
30455 •BRAY Eunava OO +0
X SHADY LN
30588 •NEIDERT Elmer OO +0
30595 PARKER V 760-256-0004 1
30633 XXXX OO
X LEONA RD
30656 •CONDER Foy OO +0
• 0 BUS 9 RES 5 NEW

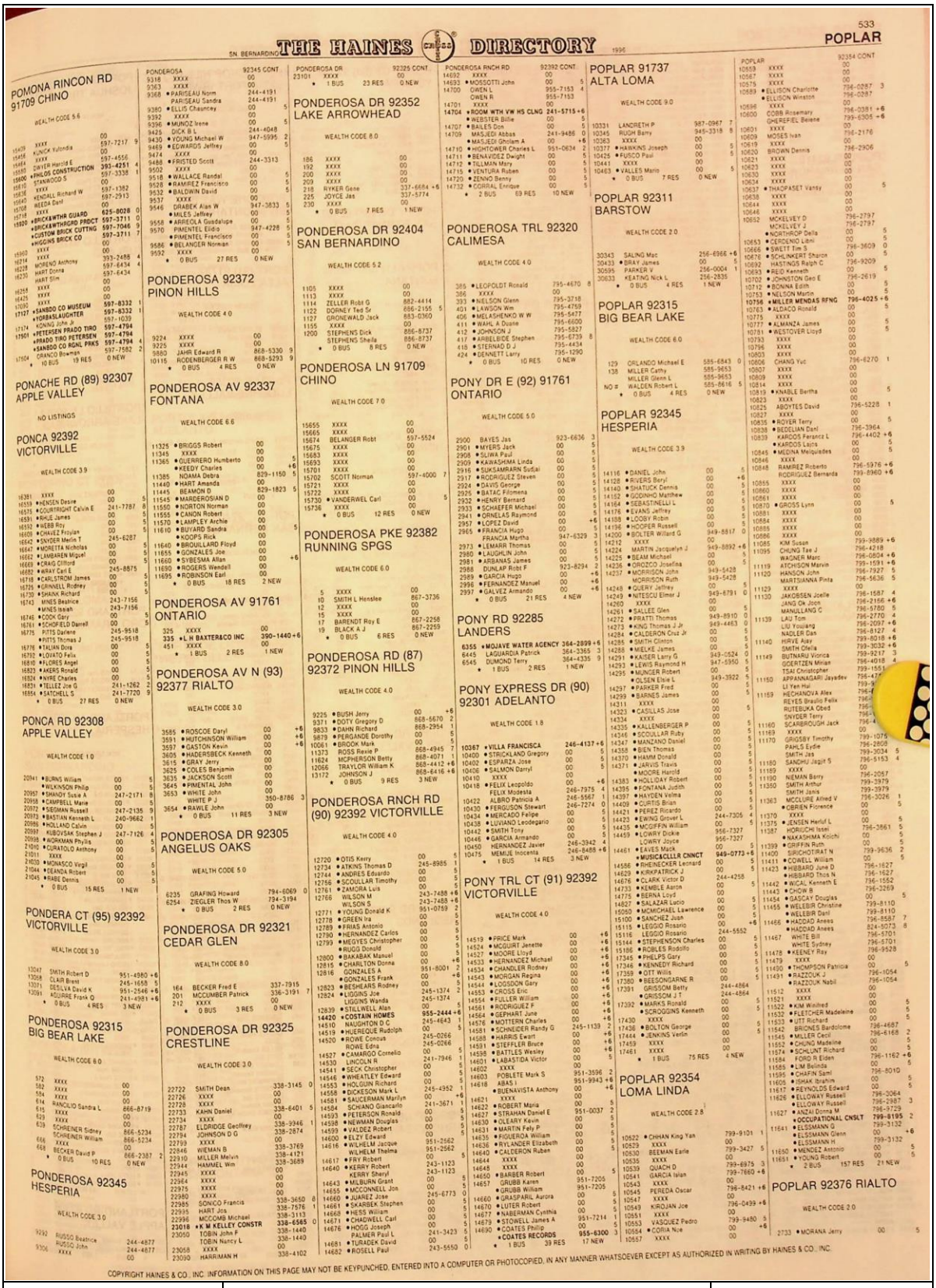
POPLAR 92345 HESPERIA
WEALTH CODE 4 0
14116 •DANIEL John OO +0
14125 •CALBOS Dionne OO +0
14140 •SHATTUCK Dennis OO +0
14152 •GODINHO Matthew OO +0
14164 •GOMEZ Joe OO +0
14176 •FELIX Humberto 760-949-4068 +0
14188 •LOOBY Robin OO +0
14196 •EVANGELISTA Arnold OO +0
14200 •BOLTER Willard G 760-949-8817
14212 •CAMERON Vera OO 8
14213 •GILBERT Dean OO +0
14224 •VELCI Kathy OO +0
14225 •BEAM Michael OO +0
14236 •OROZCO Josefina OO +0
14237 •MORRISON John OO +0
14248 •JAMES Travis OO +0
14249 •NITESCU Emer J 760-949-6701
14260 •COLE Kenneth OO +0
14261 •SALLEE Glen OO +0
14272 •PRATTI Thomas 760-949-8910
14273 •KING Thomas J Jr 760-949-4463
14284 •CALDERON Cruz OO 9
14285 PLATA Claudia V 760-948-2534 9
•SMITH Clinton OO +0
14288 •SHRYOCK Bennett OO +0
14289 •HASER Larry G 760-949-0524 7
14293 •LEWIS Raymond H 760-947-5950 5
14295 •JENKINS Laura OO +0
OLSEN Elsie L 760-949-3922 5
14297 •LIEVANO M OO +0
14299 •MINTON J OO +0
14311 •CHOLICO Marco A 760-949-3456 9
14323 •CASILLAS Jose J 760-949-5186 8
14334 •JIMENEZ Antonieta OO 9
14335 HARRIS King 760-956-3491 +0

POPLAR 92345 CONT
14346 •KALLENBERGER P OO +0
14346 •SCOLLAR Ruby OO 5
14347 •MANZANO Daniel OO 5
14358 •SIERRA Esquipula OO 9
14370 •SHULTZ William OO 8
14371 •LEONTAS Spiro OO +0
14383 •HOLLIDAY Robert OO +0
14395 •GRAY Dane OO +0
14397 •HAYDEN Velma OO +0
14409 •ESPINOLA Patrick OO +0
14421 •PEREZ Ricardo OO +0
14423 •HOPKINS Deanna OO +0
14435 •MCGIFFIN William OO +0
14447 •SUDERNO Joseph OO +0
14459 •AYALA Manuel OO +0
14461 •FRY Keith OO 7
14520 •CAUDLE Brian OO +0
14586 •RHEINECKER Leonard OO +0
14629 •KIRKPATRICK J OO 8
14673 •SLATER Sidney OO 9
14676 •CLARK Victor D 760-244-4258
14733 •REMBLE Aaron OO 5
14758 •BARNES Leo OO +0
14775 •BERNA Loyd OO
X COTTONWOOD AV
14827 •SALAZAR Lucio OO 9
14921 •LOPE James OO +0
15011 •WARNOCK Robert OO +0
15050 •MCMICHAEL Lawrence OO 5
15061 •PACKARD Robert OO 8
15100 •SANCHEZ Juan OO +0
15115 •LEGGIO Rosario OO +0
15116 LEGGIO Rosario 760-244-5552
15144 •STEPHENSON Charles OO +0
15186 •ROBLES Rodolfo OO +0
17330 •REENEY Thomas OO +0
17345 •PHELPS Gary OO +0
17348 •HOLDERFIELD J 760-947-5471 +0
•HOLDERFIELD W 760-947-5471 +0
17359 •OTT Willis OO +0
17373 •MANZER Linda OO +0
17380 •MARQUEZ Peter OO +0
17791 GRISSOM Betty 760-244-4864
•GRISSOM Jr 760-244-4864
17392 •MARKS Ronald OO +0
X ASPEN
X LAV
17430 •SEEGER Fama OO +0
17436 •BOLTON George OO +0
17444 •MILLER Glen OO +0
17459 XXXX OO
17461 •FRANKLIN Gina OO 9
• 0 BUS 64 RES 52 NEW

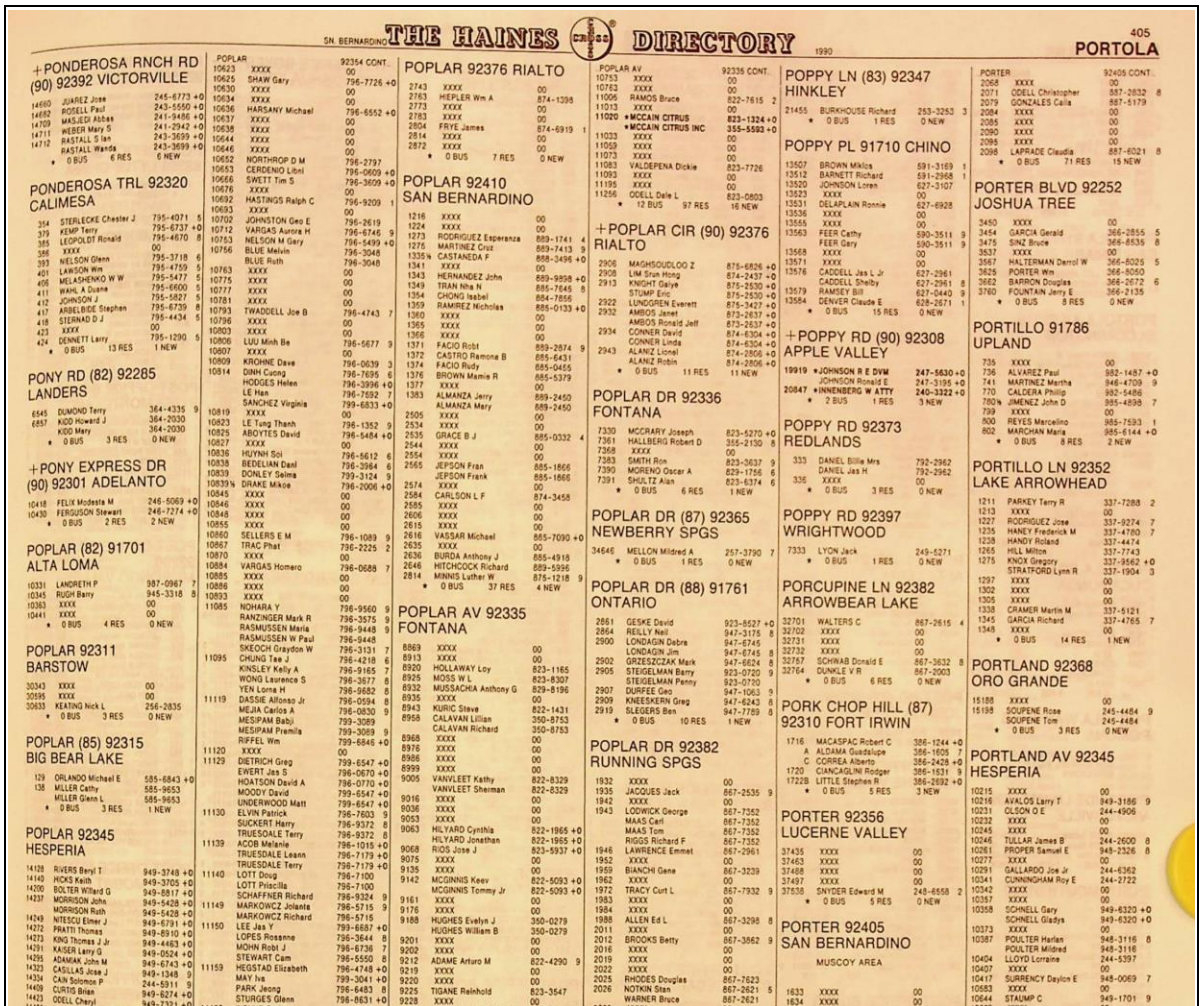
POPLAR 92354 LOMA LINDA
WEALTH CODE 3 5
X REDLANDS BLVD E
10522 •CHHAN King OO +0
10529 XXXX OO
10530 •BEEMAN Earle 909-799-3427 5
10535 •FARHA Muhammad OO +0
10536 •MAYS Bennie OO +0
10539 XXXX OO
10541 XXXX OO
10543 •VIOLA Agatino OO +0
10544 •COOK Louis OO 8
10545 PEREDA Oscar 909-796-8421 6
10547 XXXX OO
10549 XXXX OO
10551 XXXX OO
10554 •PIOTROWSKI Tyona OO 9
10555 XXXX OO
10557 XXXX OO
10561 •FARHA Muhammad OO +0
10567 XXXX OO
10568 •BATTLER Fred OO +0
10573 •FARHA Fayraoz OO +0
10575 XXXX OO
10576 •PRECIADO Macelino OO +0
10582 •PENN Larry OO +0
X PARK AV
10589 •ELLISON Charlotte 909-796-0287 3
•ELLISON Winston 909-796-0287 3
10595 XXXX OO
10600 ..... APARTMENTS
BONNELLE John Jr 909-793-3873 +0
SHERFEEL Beena 909-799-6305 6
LOPEZ Jose De Jesus 909-796-5437 7
OZKARAHAN Mehmet OO +0
RAMIREZ Marina 909-796-5387 +0
10600 .....
10601 •FARHA Muhammad OO +0
10603 XXXX OO
10609 •MOSES Ivan 909-796-2176
10619 •DELARIVA Antonio OO +0
10620 •BROWN Dennis 909-796-2906
10621 XXXX OO
10623 XXXX OO
10630 •OURSA Donald OO +0
10634 XXXX OO
10636 CASTRO Priscilla 909-796-3317 9
10637 •THAPASET Vaney OO 8
10638 SUN Judy 909-796-5682 9
10644 •HORNE Jerry OO +0
10646 XXXX OO
10652 MCKELVEY D 909-796-2797
MCKELVEY J 909-796-2797
10653 XXXX OO
10666 •SWETT Tim S 909-796-9363 7
10675 •BLIZONDO Carmen OO +0
VARGAS Rafael 909-796-5738 9
10692 •CROFT Samuel OO +0
HASTINGS Ralph C 909-796-9209
10693 •REID Kenneth OO +0
X COTTAGE
10702 •JOHNSTON Geo E 909-796-2619
10712 MEADOWS Jennifer A 909-478-0311 +0
10753 •NELSON Martin OO +0
10756 XXXX OO
10763 •ALDACO Ronald OO +0
X PALM DR
10777 DIEFFENBACKER Sheree 909-478-1941 9
10779 •HUEN Peter OO +0
10781 •WESTOVER Lloyd OO +0
10793 •RAPP Fritz OO +0
10796 XXXX OO
X REMSEN
10802 •PORNPONGPAN P OO 8
10806 •KUNIHIRA Shirou OO +0
10807 XXXX OO
10809 •KROHNE Rozella OO +0
10814 HOLGUIN Irma 909-793-6935 9
10819 •KNABLE Bertha OO +0
SANTOS Robert 909-799-9716 +0
10823 XXXX OO
10825 ABOYTES David 909-796-5228 1
10827 •NELSON Gregory OO +0

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| Adjacent A | 12200-12400 Block of Poplar St | 2000 |
|---|---|---|




| Adjacent A | 12200-12400 Block of Poplar St | 1996 |
|---|---|---|



SN. BERNARDINO **THE HAINES CROSS DIRECTORY** 1990 405 **PORTOLA**

+PONDEROSA RNCH RD (90) 92392 VICTORVILLE

14660 JUAREZ Jose 245-6773 +0
14682 ROSELL Paul 243-5550 +0
14709 MASJEED Abbas 241-9486 +0
14717 WEBER Mary S 241-2942 +0
14712 RASTALL S Ian 243-3699 +0
RASTALL Wanda 243-3699 +0
* 0 BUS 6 RES 6 NEW

PONDEROSA TRL 92320 CALIMESA

354 STERLECKE Chester J 795-4071 5
379 KEMP Terry 795-6737 +0
385 LEOPOLDT Ronald 795-4670 8
386 XXXX 00
393 NELSON Glenn 795-3718 6
401 LAWSON Wm 795-4759 5
406 MELASHENKO W W 795-5477 5
411 WAHL A Duane 795-6600 5
412 JOHNSON J 795-5827 5
417 ARBELBIDE Stephen 795-6739 8
418 STERNAD D J 795-4434 5
423 XXXX 00
424 DENNETT Larry 795-1290 5
* 0 BUS 13 RES 1 NEW

PONY RD (82) 92285 LANDERS

6545 DUMOND Terry 364-4335 9
6857 KIDD Howard J 364-2030
KIDD Mary 364-2030
* 0 BUS 3 RES 0 NEW

+PONY EXPRESS DR (90) 92301 ADELANTO

10418 FELIX Modesta M 246-5069 +0
10430 FERGUSON Stewart 246-7274 +0
* 0 BUS 2 RES 2 NEW

POPLAR (82) 91701 ALTA LOMA

10331 LANDRETH P 987-0967 7
10345 RUGH Barry 945-3318 8
10363 XXXX 00
10441 XXXX 00
* 0 BUS 4 RES 0 NEW

POPLAR 92311 BARSTOW

30343 XXXX 00
30595 XXXX 00
30633 KEATING Nick L 256-2835
* 0 BUS 3 RES 0 NEW

POPLAR (85) 92315 BIG BEAR LAKE

129 ORLANDO Michael E 585-6843 +0
138 MILLER Cathy 585-9653
MILLER Glenn L 585-9653
* 0 BUS 3 RES 1 NEW

POPLAR 92345 HESPERIA

14128 RIVERS Beryl T 949-3748 +0
14140 HICKS Keith 949-3705 +0
14200 BOLTER Willard G 949-6817 +0
14237 MORRISON John 949-5428 +0
MORRISON Ruth 949-5428 +0
14249 NITESCU Elmer J 949-6791 +0
14272 PRATTI Thomas 949-8910 +0
14273 KING Thomas J Jr 949-4463 +0
14291 KAISER Larry G 949-0524 +0
14295 ADAMIAK John M 949-6743 +0
14323 CASILLAS Jose J 949-1348 9
14324 CAIN Solomon P 244-5911 9
14409 CURTIS Brian 949-8274 +0
14423 ODELL Cheryl 949-7321 +0
14435 VAILLANCOURT John M 948-2527 9
14461 RODRIGUEZ Frances R 949-6129 9
14529 XXXX 00
14576 CLARK Victor D 244-4258
15000 XXXX 00
15116 LEGGIO Rosario 244-5552 4
17330 COLE Gary 948-4161 +0
17380 XXXX 00
17391 CRUMBY Howard J 244-4947 5
17430 SEEGER Don G 948-0263 +0
17439 BOLTON George T 244-3083
XXXX 00
17461 BURROW Ray V 244-6344 6
* 0 BUS 27 RES 14 NEW

POPLAR 92354 LOMA LINDA

10522 XXXX 00
10529 XXXX 00
10539 BEEMAN Earle 793-3427 9
10535 XXXX 00
10539 XXXX 00
10541 KHO Zick 796-3119 +0
10543 XXXX 00
10547 XXXX 00
10549 XXXX 00
10551 XXXX 00
10553 RORICK H S 796-1613 7
10554 NELSON Becky 796-9354
NELSON Ed 796-9354
10555 FLATTINGER Shari 796-6819 7
10557 DANIELS Wanda 796-3873 9
10559 XXXX 00
10560 HUGHBANKS Kristine 796-4469 +0
10561 DEY Sami 796-0658 5
10567 MORROW J 796-4957 +0
10569 RORICK Tracy 796-7041 6
MENDEZ Juan 796-4192 8
10576 ROACH Wright Ida 796-6387 +0
10589 XXXX 00
FORDE Charlotte 825-0287 2
10596 RIVERS Francine 796-8534 +0
10600 XXXX 00
**TOWNHOUSE APTS**
HIYABU Hyabu
HOWEY John 796-1046 8
10600 DECHONE Sirila 796-6411 8
MCMULLEN David V 796-6275 7
NAVARRO Henry 796-7609 6
SIMON Valdemar 799-3484 +0
SKINNER John 796-7002 6
796-2545 9
10601 ZAMORA Stephen 796-1022 8
10609 MOSES Ivan 796-2176
10620 XXXX 00
10621 BROWN Dennis 796-2906
XXXX 00

POPLAR 92354 CONT.

10625 SHAW Gary 796-7726 +0
10630 XXXX 00
10634 XXXX 00
10636 HARSANY Michael 796-6552 +0
10637 XXXX 00
10638 XXXX 00
10644 XXXX 00
10646 XXXX 00
10652 NORTHROP D M 796-2797
10653 CERDENIO Libni 796-0609 +0
10656 SWETT Tim S 796-3609 +0
10676 XXXX 00
10692 HASTINGS Ralph C 796-9209 1
10693 XXXX 00
10702 JOHNSTON Geo E 796-2619
10712 VARGAS Aurora H 796-6746 9
10753 NELSON M Gary 796-5499 +0
10756 BLUE Melvin 796-3048
BLUE Ruth 796-3048
10763 XXXX 00
10775 XXXX 00
10777 XXXX 00
10781 XXXX 00
10793 TWADDELL Joe B 796-4743 7
10796 XXXX 00
10803 XXXX 00
10806 LUU Minh Be 796-5677 9
10807 XXXX 00
10809 KROHNE Dave 796-0639 3
10814 DINH Cuong 796-7695 6
HODGES Helen 796-3996 +0
LE Han 796-7692 7
SANCHEZ Virginia 799-6833 +0
10819 XXXX 00
10823 LE Tung Thanh 796-1352 9
10825 ABOYTES David 796-5484 +0
10827 XXXX 00
10836 HUYNH Soi 796-5612 6
10838 BEDELIAN Dani 796-3964 6
10839 DONLEY Selma 799-3124 9
10839½ DRAKE Mikie 796-2006 +0
10845 XXXX 00
10846 XXXX 00
10848 XXXX 00
10855 XXXX 00
10860 SELLERS E M 796-1089 9
10867 TRAC Phat 796-2225 2
10870 XXXX 00
10884 VARGAS Homero 796-0688 7
10885 XXXX 00
10886 XXXX 00
10893 XXXX 00
11085 NOHARA Y 796-9560 9
RANZINGER Mark R 796-3575 9
RASMUSSEN Maria 796-9448 9
RASMUSSEN W Paul 796-9448
SKEOCH Graydon W 796-3131 7
11095 CHUNG Tae J 796-4218 6
KINSLEY Kelly A 796-9165 7
WONG Laurence S 796-3677 8
YEN Lorna H 796-9682 8
11119 DASSIE Alfonso Jr 796-0594 8
MEJIA Carlos A 796-0830 9
MESIPAM Babji 799-3089
MESIPAM Premila 799-3089 9
RIFFEL Wm 799-6846 +0
11120 XXXX 00
11129 DIETRICH Greg 799-6547 +0
EWERT Jas S 796-0670 +0
HOATSON David A 796-0770 +0
MOODY David 799-6547 +0
UNDERWOOD Matt 799-6547 +0
11130 ELVIN Patrick 796-7603 9
SUCKERT Harry 796-9372 8
TRUESDALE Terry 796-9372 8
11139 ACOB Melanie 796-1015 +0
TRUESDALE Leann 796-7179 +0
TRUESDALE Terry 796-7179 +0
11140 LOTT Doug 796-7100
LOTT Priscilla 796-7100
SCHAFFNER Richard 796-9324 9
11149 MARKOWCZ Jolanta 796-5715 9
MARKOWCZ Richard 796-5715
11150 LEE Jas Y 799-6687 +0
LOPES Rosanne 796-3644 8
MOHN Robt J 796-6738 7
STEWART Cam 796-5550 8
11159 HEGSTAD Elizabeth 796-4748 +0
MAY Iva 799-3041 +0
PARK Jeong 796-6483 8
STURGES Glenn 796-8631 +0
11160 INDUYE Craig 796-2958 6
WEAVER Gerald 796-7534
WEAVER Shelley 796-7534 8
11169 MATOS Carmen 799-6320 +0
STRUM Scott 796-4208 +0
11170 PAHLS Eydie 796-2808 2
ROBINSON Brett W 799-3195 +0
ROBINSON Greg 796-0366 7
11179 VOEGELE S 796-8456 9
11180 SPESSERT Howard 796-0828 9
VANGENT Conrad M 796-3321 8
11189 BETETA Erwing 796-9433 8
ISAAC Moni T 796-4995 9
KARDOS Ferancz L 796-4402 +0
NEDELCU Vasile 796-3474 +0
11190 IZEOGU Kachi 796-5124 8
NIEMAN Barry 796-2057
XXXX 00
11350 XXXX 00
11363 OBRIEN Geo 796-3026 4
11375 XXXX 00
11387 NAKASHIMA Koichi 796-2356 9
11400 HAPPEL R M 796-8828 8
11411 MESSINGER Harold R 796-6763 4
11423 HIBBARD June D 796-1627
HIBBARD Thos N 796-1627
11442 WICAL Kenneth E 796-1552
11443 CHOW B 796-3269
11454 XXXX 00
11455 WELEBIR Christine 825-0959
WELEBIR Daniel 825-0959
11466 HADDAD Aneos 796-8587 7
HADDAD Aneos 824-5073 8
11467 WHITE Bill 796-5701
WHITE Sydney 796-5701
11478 KEENEY Ray 796-9528
11479 XXXX 00
11490 XXXX 00
11491 RAZZOUK J 796-1054
RAZZOUK Nabil 796-1054
11512 COLWELL Harold W 796-0732 8
11521 XXXX 00
11542 BRIONES Bardolome 796-4687 3
11545 LUTZ Robt D 796-4281 9
11552 XXXX 00
11574 XXXX 00
11584 XXXX 00
11585 SHENNAR Arek 796-1797 5
11594 JACKSON Bonnie 796-8166 +0
JACKSON Monte 796-8168 +0
CHAFIN Saml 796-8010
11605 HALMER Darwin 796-8886 +0
11617 XXXX 00
11626 ELLOWAY Russell 824-6179 4
ELLOWAY Russell 796-3064 4
11627 ANZAI Donna M 796-9729 4
11641 COMSTOCK Delos MD 796-8613 4
11650 SPECHT Walter F 796-7668
11651 WALKER E Alan 824-1477 8
* 0 BUS 188 RES 36 NEW

POPLAR 92376 RIALTO

2743 XXXX 00
2763 HIEPLER Wm A 874-1398
2773 XXXX 00
2783 XXXX 00
2804 FRYE James 874-5919 1
2814 XXXX 00
2872 XXXX 00
* 0 BUS 7 RES 0 NEW

POPLAR 92410 SAN BERNARDINO

1216 XXXX 00
1224 XXXX 00
1273 RODRIGUEZ Esperanza 889-1741 4
1275 MARTINEZ Cruz 889-7413 9
1335½ CASTANEDA F 888-3496 +0
1341 XXXX 00
1343 HERNANDEZ John 889-9858 +0
1349 TRAN Nha N 885-7646 8
1354 CHONG Isabel 884-7856
1359 RAMIREZ Nicholas 885-0133 +0
1360 XXXX 00
1365 XXXX 00
1366 XXXX 00
1371 FACIO Robt 889-2874 9
1372 CASTRO Ramona B 885-6431
1374 FACIO Rudy 885-0455
1376 BROWN Mamie R 885-5379
1377 XXXX 00
1383 ALMANZA Jerry 889-2450
ALMANZA Mary 889-2450
2505 XXXX 00
2534 XXXX 00
2535 GRACE B J 885-0332 4
2537 XXXX 00
2554 XXXX 00
2565 JEPSON Fran 885-1866
JEPSON Frank 885-1866
2574 XXXX 00
2584 CARLSON L F 874-3458
2585 XXXX 00
2606 XXXX 00
2615 XXXX 00
2616 VASSAR Michael 885-7090 +0
2635 XXXX 00
2636 BURDA Anthony J 886-4918
2646 HITCHCOCK Richard 889-5996
2814 MINNIS Luther W 875-1218 9
* 0 BUS 37 RES 4 NEW

POPLAR AV 92335 FONTANA

8869 XXXX 00
8913 XXXX 00
8920 HOLLAWAY Loy 823-1165
8925 MOSS W L 823-8307
8932 MUSSACHIA Anthony G 829-8196
8935 XXXX 00
8943 KURIC Steve 822-1431
8958 CALAVAN Lillian 350-8753
CALAVAN Richard 350-8753
8968 XXXX 00
8976 XXXX 00
8986 XXXX 00
8999 XXXX 00
9009 VANVLEET Kathy 822-8329
VANVLEET Sherman 822-8329
9016 XXXX 00
9036 XXXX 00
9053 XXXX 00
9063 HILYARD Cynthia 822-1965 +0
HILYARD Jonathan 822-1965 +0
9068 RIOS Jose J 823-5937 +0
9075 XXXX 00
9135 XXXX 00
9142 MCGINNIS Keev 822-5093 +0
MCGINNIS Tommy Jr 822-5093 +0
9161 XXXX 00
9176 XXXX 00
9188 HUGHES Evelyn J 350-0279
HUGHES William B 350-0279
9201 XXXX 00
9205 XXXX 00
9212 ADAME Arturo M 822-4290 9
9219 XXXX 00
9220 XXXX 00
9230 TIGANE Reinhold 823-3547
9228 XXXX 00
9230 HERNANDEZ Rodrigo I 350-2434 +0
9245 CARROLL Wm 822-0632
9248 XXXX 00
9266 XXXX 00
9276 XXXX 00
9278 SANDOVAL Carmen 823-3070 +0
9309 XXXX 00
9316 XXXX 00
9377 XXXX 00
9401 XXXX 00
9418 COUSER Thomas A 829-0894 7
9438 SMITH Thos 822-3568
9486 XXXX 00
9494 TANNER Cecil 823-7046 7
9524 XXXX 00
9558 ★MODERN KITCHEN&BTH 350-8433 6
9570 XXXX 00
9571 GARDEA Robert C 355-3751 +0
9580 XXXX 00
9594 SORENSON C A 829-2079
9607 CONNER Ellen 822-9010
NUSKE Thos 829-4085 6
9715 SOWERS Calvin C 823-6089
9724 XXXX 00
9729 XXXX 00
9734 XXXX 00
9741 ★DONS LOCK&KEY SV 823-2014
LITTLE Donald F 823-8311 7
9742 XXXX 00
9766 XXXX 00
9775 MITCHELL Ronald I 350-0291 1
9778 XXXX 00
9784 CAREY Richard J 823-8332
9791 XXXX 00
9801 FAKAS James 350-1630 8
9811 XXXX 00
9835 LOPEZ Damian G 823-1157
9840 XXXX 00
9859 XXXX 00
9860 MORNING Robt T 829-9187 4
9870 MARTINEZ Jesus 355-5166 +0
9890 PHOU Neav Meng 829-7915 9
9914 XXXX 00
9937 ★FONTANA SC POPLAR 350-9123 7
9944 ESPARZA H 823-9716 +0
9974 HIDALGO Frederick E 822-3407
10058 XXXX 00
10060 XXXX 00
10065 XXXX 00
10150 ★AYALA BORING INC 350-8940 7
10155 ★BEST WAY M H SALES 350-1020 8
STOUT John Rfng 355-6560 9
10207 CROSS Robt M 823-8343
10208 XXXX 00
10355 XXXX 00
10650 ★PIONEER ROOFING TLE 350-4238 +0
10691 ★T N T BST WY TRANS 355-6696 +0
★T N T BST WY TRANS 822-0600 +0
★T N T BSTWY TRANS 822-9531 +0
10703 ★FONTANA MACH&ENGR 823-0657 4

POPLAR AV 92335 CONT.

10753 XXXX 00
10762 XXXX 00
11006 RAMOS Bruce 822-7615 2
11013 XXXX 00
11020 ★MCCAIN CITRUS 823-1324 +0
★MCCAIN CITRUS INC 355-5593 +0
11033 XXXX 00
11059 XXXX 00
11073 XXXX 00
11083 VALDEPENA Dickie 823-7726
11093 XXXX 00
11195 XXXX 00
11256 ODELL Dale L 823-0803
★ 12 BUS 97 RES 16 NEW

+POPLAR CIR (90) 92376 RIALTO

2906 MAGHSOUDLOO Z 875-6826 +0
2908 LIM Sun Hong 874-2437 +0
2913 KNIGHT Galye 875-2530 +0
STUMP Eric 875-2530 +0
2922 LUNGGREN Everett 875-3427 +0
2932 AMBOS Janet 873-2637 +0
AMBOS Ronald Jeff 873-2637 +0
2934 CONNER David 874-6304 +0
CONNER Linda 874-6304 +0
2943 ALANIZ Lionel 874-2806 +0
ALANIZ Robin 874-2806 +0
* 0 BUS 11 RES 11 NEW

POPLAR DR 92336 FONTANA

7330 MCCRARY Joseph 823-5270 +0
7361 HALLBERG Robert D 355-2130 8
7368 XXXX 00
7383 SMITH Ron 823-3637 9
7390 MORENO Oscar A 823-1756 6
7391 SHULTZ Alan 823-6374 6
* 0 BUS 6 RES 1 NEW

POPLAR DR (87) 92365 NEWBERRY SPGS

34646 MELLON Mildred A 257-3790 7
* 0 BUS 1 RES 0 NEW

POPLAR DR (88) 91761 ONTARIO

2861 GESKE David 923-8527 +0
2864 REILLY Neil 947-3175 8
2900 LONDAGIN Debre 947-6745
LONDAGIN Jim 947-6745 8
2902 GRZESZCZAK Mark 947-6624 8
2905 STEIGELMAN Barry 923-0720 9
STEIGELMAN Penny 923-0720
2907 DURFEE Geo 947-1063 9
2909 KNEESKERN Greg 947-6243 8
2919 SLEGERS Ben 947-7759 8
* 0 BUS 10 RES 1 NEW

POPLAR DR 92382 RUNNING SPGS

1932 XXXX 00
1935 JACQUES Jack 867-2535 9
1942 XXXX 00
1943 LODWICK George 867-7352
MAAS Carl 867-7352
MAAS Tom 867-7352
RIGGS Richard F 867-7352
1946 LAWRENCE Emnet 867-2961
1952 XXXX 00
1959 BIANCHI Gene 867-3239
1962 XXXX 00
1972 TRACY Curt L 867-7932 9
1983 XXXX 00
1984 XXXX 00
1988 ALLEN Ed L 867-3298 8
2011 XXXX 00
2012 BROOKS Betty 867-3862 9
2016 XXXX 00
2019 XXXX 00
2022 XXXX 00
2025 RHODES Douglas 867-7623
2026 NOTKIN Stan 867-2621 5
WARNER Bruce 867-2621
2030 XXXX 00
* 0 BUS 24 RES 0 NEW

POPLAR LN 91709 CHINO

3910 DRUCKERMAN Gerald 597-2309
3920 SANDERS Don 597-2254
SANDERS Judy 597-2254
3921 FRANKLIN Mitchell 597-8352 9
3931 PARKS Ron 597-6724 9
3950 BETTENCOURT M E 597-2944
3960 XXXX 00
3970 HOLLAND J 597-1470
3980 SYVERSON Wes 597-7247 7
4020 XXXX 00
4030 XXXX 00
4040 ROGERS Wm F Jr 597-8452 5
* 0 BUS 12 RES 0 NEW

POPPETT DR (83) 92346 HIGHLAND

7201 XXXX 00
7255 DICARLO Charles 864-7985 6
* 0 BUS 2 RES 0 NEW

POPPY AV (88) 91786 UPLAND

1488 DAVIS Benjamin 981-4233 +0
DAVIS Rose 981-4233 +0
2241 RODDEN Edw 949-9973 +0
2251 WHITE L 946-1392 9
2279 XXXX 00
2283 VANCE Raymond H Rev 981-8760 8
2295 ADDO Saml Sr 949-2944 +0
★SAMS SNACKS MASTERS 982-5095 +0
★ 1 BUS 7 RES 5 NEW

POPPY CT (87) 91739 ETIWANDA

6608 BOTSFORD H 899-3130 7
BOTSFORD R Jr 899-3130
6636 SCOTT Rodger 899-2064 7
* 0 BUS 3 RES 0 NEW

POPPY DR (88) 92407 SAN BERNARDINO

2505 IV Kheang 880-1352 8
2515 DAHLSTROM Ronald 880-3557 9
2545 MILLER Philip 887-5407 8
2564 TOLEDO L 887-9638 8
2594 MATCHETTE Rene A 887-4168 8
* 0 BUS 5 RES 0 NEW

POPPY LN (83) 92347 HINKLEY

21455 BURKHOUSE Richard 253-3253 3
* 0 BUS 1 RES 0 NEW

POPPY PL 91710 CHINO

13507 BROWN Miklos 591-3169 1
13512 BARNETT Richard 591-2968 1
13520 JOHNSON Loren 627-3107
13523 XXXX 00
13531 DELAPLAIN Ronnie 627-6928
13536 XXXX 00
13565 XXXX 00
13563 FEER Cathy 590-3511 9
FEER Gary 590-3511 9
13568 XXXX 00
13571 XXXX 00
13576 CADDELL Jas L Jr 627-2961
CADDELL Shelby 627-2961 8
13579 RAMSEY Bill 627-0440 9
13584 DENVER Claude E 628-2671 1
* 0 BUS 15 RES 0 NEW

+POPPY RD (90) 92308 APPLE VALLEY

19919 ★JOHNSON R E DVM 247-5630 +0
JOHNSON Ronald E 247-3195 +0
20847 ★INNENBERG W ATTY 240-3322 +0
* 2 BUS 1 RES 3 NEW

POPPY RD 92373 REDLANDS

333 DANIEL Billie Mrs 792-2962
DANIEL Jas H 792-2962
336 XXXX 00
* 0 BUS 3 RES 0 NEW

POPPY RD 92397 WRIGHTWOOD

7333 LYON Jack 249-5271
* 0 BUS 1 RES 0 NEW

PORCUPINE LN 92382 ARROWBEAR LAKE

32701 WALTERS C 867-2615 4
32702 XXXX 00
32731 XXXX 00
32732 XXXX 00
32757 SCHNAB Donald E 867-3632 8
32764 DUNKLE V R 867-2003
* 0 BUS 6 RES 0 NEW

PORK CHOP HILL (87) 92310 FORT IRWIN

1716 MACASPAC Robert C 386-1244 +0
A ALDAMA Guadalupe 386-1605 7
C CORREA Alberto 386-2428 +0
1720 CIANCAGLINI Rodger 386-1831 9
17228 LITTLE Stephen R 386-2692 +0
* 0 BUS 5 RES 3 NEW

PORTER 92356 LUCERNE VALLEY

37435 XXXX 00
37463 XXXX 00
37488 XXXX 00
37497 XXXX 00
37538 SNYDER Edward M 248-6558 2
* 0 BUS 5 RES 0 NEW

PORTER 92405 SAN BERNARDINO

MUSCOY AREA

1633 XXXX 00
1634 XXXX 00
1638 XXXX 00
1642 XXXX 00
1647 MURRIETA Richard 887-1167 +0
1661 AQUAYO Julian A 887-9510 7
LOZA Genaro 887-0999 +0
1662 XXXX 00
1665 XXXX 00
1666 XXXX 00
1669 XXXX 00
1742 WILSON Beverly A 887-1868
1738 XXXX 00
1757 XXXX 00
1758 XXXX 00
1767 XXXX 00
1768 STIGGERS Helen 887-3386
1778 CARTER Ruth Mae 887-2733
1787 JUAREZ Clemente 887-0232 6
1788 GAGE Sammie 887-1786
1806 MILLER Ruthie 887-5809 8
1807 MOORE Johnny M 887-1602
1817 XXXX 00
1826 XXXX 00
1827 XXXX 00
1837 OEUN Yan 880-8594 +0
1846 XXXX 00
1847 XXXX 00
1856 ANGSORN Syvilay 880-2822 8
1866 BECK L O 887-3409 +0
1867 XXXX 00
1876 SYTHA Inoy 887-5645 8
1877 VELASCO Angel 880-8035 +0
1886 BROWN Catrice 887-4240 +0
RUMBLES Connie M 887-2529
1896 MOREAU Leramie 887-0286 +0
1915 XXXX 00
1927½ RAMIREZ Reina 887-2390 +0
1928 GARCIA Emilio 887-0708 +0
1935 XXXX 00
1942 XXXX 00
1945 XXXX 00
1950 XXXX 00
1959 STARK Dan 887-3059
1964 ROSSELLI Anthony J 887-5616
1965 XXXX 00
1969 TORRES Rogelio 887-6591 +0
1970 XXXX 00
1975 HARRINGTON Robt 880-8727 +0
1980 LAMBERT Charlotte 887-1813
LAMBERT Kenneth 887-1813
1989 RUBALCBA Juan 887-5281 +0
1990 ALDERETE Rosalinda 887-4834 +0
2025 MOORE G 887-0363 4
2026 XXXX 00
2034 MADDOX Wm F 887-5178
2035 XXXX 00
2036 CLAYTON Dell 887-1939 +0
2036½ KRILOWICZ Chester 887-6273 +0
2045 LENTZ Lawrence 887-3964 3
MONETTE Lucille 887-1848
2048 PROCK Calvin 887-2633
2053 GOULD Wm R 887-1870

PORTER 92405 CONT.

2068 XXXX 00
2071 ODELL Christopher 887-2832 8
2079 GONZALES Calla 887-5179
2084 XXXX 00
2085 XXXX 00
2090 XXXX 00
2095 XXXX 00
2098 LAPRADE Claudia 887-6021 8
* 0 BUS 71 RES 15 NEW

PORTER BLVD 92252 JOSHUA TREE

3450 XXXX 00
3454 GARCIA Gerald 366-2855 5
3475 SINZ Bruce 366-8535 8
3537 XXXX 00
3567 HALTERMAN Darrol W 366-8025 5
3625 PORTER Wm 366-8050
3662 BARRON Douglas 366-2672 6
3760 FOUNTAIN Jerry E 366-2135
* 0 BUS 8 RES 0 NEW

PORTILLO 91786 UPLAND

735 XXXX 00
736 ALVAREZ Paul 982-1487 +0
741 MARTINEZ Martha 946-4709 9
770 CALDERA Phillip 982-5486
780½ JIMENEZ John D 985-4898 7
799 XXXX 00
800 REYES Marcelino 985-7593 1
802 MARCHAN Maria 985-6144 +0
* 0 BUS 8 RES 2 NEW

PORTILLO LN 92352 LAKE ARROWHEAD

1211 PARKEY Terry R 337-7288 2
1213 XXXX 00
1227 RODRIGUEZ Jose 337-9274 7
1235 HANEY Frederick M 337-4780 7
1238 HANDY Roland 337-4474
1265 HILL Milton 337-7743
1275 KNOX Gregory 337-9562 +0
STRATFORD Lynn R 337-1904 3
1297 XXXX 00
1302 XXXX 00
1305 XXXX 00
1338 CRAMER Martin M 337-5121
1345 GARCIA Richard 337-4765 7
1348 XXXX 00
* 0 BUS 14 RES 1 NEW

PORTLAND 92368 ORO GRANDE

15188 XXXX 00
15198 SOUPENE Rose 245-4484 9
SOUPENE Tom 245-4484
* 0 BUS 3 RES 0 NEW

PORTLAND AV 92345 HESPERIA

10215 XXXX 00
10216 AVALOS Larry T 949-3186 9
10231 OLSON O E 244-4906
10232 XXXX 00
10245 XXXX 00
10246 TULLAR James B 244-2600 8
10261 PROPER Samuel E 949-2326 8
10277 XXXX 00
10291 GALLARDO Joe Jr 244-6362
10341 CUNNINGHAM Roy E 244-2722
10342 XXXX 00
10357 XXXX 00
10358 SCHNELL Gary 949-6320 +0
SCHNELL Gladys 949-6320 +0
10373 XXXX 00
10387 POULTER Harlan 948-3116 8
POULTER Mildred 948-3116
10404 LLOYD Lorraine 244-5397
10407 XXXX 00
10417 SURRENCY Daylon E 948-0069 7
10583 XXXX 00
10644 STAUMP C 949-1701 9
10659 XXXX 00
10669 SANDERS Michael J 244-6566
10690 HERRING Peter 949-7833 +0
HERRING Sonia 949-7833 +0
10723 BRYCE Fred J 244-7284
BRYCE Jeanne 244-7284
10726 BEELER Lawrence L 244-2504
10741 HUTCHISON V L 948-1524 5
10752 KING Michael A 949-9297 +0
10784 DOHNKE Maxine 244-3940
10801 XXXX 00
10802 XXXX 00
10816 XXXX 00
* 0 BUS 35 RES 5 NEW

PORTLAND RD (86) 92308 APPLE VALLEY

23763 WOODCOCK Ray 247-3991 9
23780 KING Richard D 247-5303 6
* 0 BUS 2 RES 0 NEW

PORTOFINO CT 91709 CHINO

13522 DEVLIN Gregory P 590-1581 8
* 0 BUS 1 RES 0 NEW

+PORTOFINO DR (90) 91730 CUCAMONGA

11632 ★GRUPE DEVELOPMENT 945-3143 +0
* 1 BUS 0 RES 1 NEW

PORTO GRANDE 91765 DIAMOND BAR

SEE LOS ANGELES EASTERN SAN GABRIEL VALLEY DIRECTORY

PORTOLA 92405 SAN BERNARDINO

MUSCOY AREA

2203 XXXX 00
2205 ORNELAS D 880-1731 +0
2211 MILLER David R 887-1946
2221 XXXX 00
2261 XXXX 00
2267 XXXX 00
2271 XXXX 00
2274 MOLINA Robt R 887-3104

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| Adjacent A | 12200-12400 Block of Poplar St | 1990 |
|---|---|---|

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

# Fire Insurance Map Results

REPORT RESULTS



## Report Results for:

Megan Black
UltraSystems Environmental Inc.
16431 Scientific Way
Irvine, CA 92618
2104769356 FIM
September 15, 2022

## Site Information:

Cargo Solutions-Truck Warehouse
APNs 3064-591-12, -13, 17, -18 and 3064-631-01
Hesperia, CA 92344

ENVIRONMENTAL RECORD SEARCH

**Subject Site:**

*Client's Project #:* **7187**
*Address:* **APNs 3064-591-12, -13, 17, -18 and 3064-631-01**
*City, State Zip:* **Hesperia, CA 92344**

**ERS Order #:**

**2104769356 FIM**

**Prepared For:**

*Name:* **Megan Black**
*Company:* **UltraSystems Environmental Inc.**
*Address:* **16431 Scientific Way**
*City, State Zip:* **Irvine, CA 92618**

**Date:**

**September 15, 2022**

**Prepared By:**

*Name:* **Michael Peel**
*Phone #:* **(714) 669-8096 Ext. 1002**

**Years Reviewed:**

**N/A** - Coverage was not available for Hesperia

**Historical Fire Insurance Map Search Result:**

The review of collections and indexes has determined that no historical fire insurance maps are available within these collections and indexes for the referenced site; therefore they are not available and are considered not "reasonably ascertainable" according to ASTM standards. Environmental Record Search (ERS) certifies that a thorough search of our holdings, various other collections and indexes has been completed.

Thank you for selecting ERS.

**Researched by:**

Eric Kieselbach

**Eric Kieselbach**



ENVIRONMENTAL RECORD SEARCH
"The Intelligent Choice"

## RecCheck Report for : SDBA

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.01 miles NW | 3620 ft | 1 |

| SITE NAME | MAPS | ID |
|---|---|---|
| B & D Industrial Park | 1,4 | 338278 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| Popular St & Three Flags Ave | Hesperia | 92345 |

### DETAILS

Original Database: NPDES-SW-CA
Last Agency Status: Listed
Archive Date: 06/01/16
No Longer Listed-Registered Meas ID: 338278
Registered Meas Type: Construction
WDID: 6B36C350089
Received Date: 5/9/2008
Processed Date: 12/20/2007
Termination Date: 6/8/2010
Status Code Name: Terminated
Status Date: 6/16/2010
REGION: Not Reported
County Code: 36
Place Size: 3
Place Size Unit: Acres
Facility County: San Bernardino
Facility Contact Name: Bob Carson
Facility Contact Title: Not Reported
Facility Contact Phone: 999-999-9999
Facility Contact Phone Extension: Not Reported
Facility Contact Email Address: Not Reported
Operator Name: Destin Steel Inc
Operator Address: 12127 Mallcenter Blvd A 171
Operator City: Victoville
Operator State: California
Operator Zip: 92392
Operator Contact Name: Dan Higgins
Operator Contact Title: Not Reported

Operator Contact Phone: 909-350-1227
Operator Contact Phone Extension: Not Reported
Operator Contact Email Address: Not Reported
Operator Type: Private Business
Developer Name: Clear Water Services
Developer Address: 2990 La Jolla St
Developer City: Anaheim
Developer State: California
Developer Zip: 92806
Developer Contact Name: Bob Carson
Developer Contact Title: Not Reported
Constype Linear Utility Ind: Not Reported
Emergency Phone Number: 951-764-1243
Emergency phone Number Extension: Not Reported
Constype Aboveground Ind: Not Reported
Constype Belowground Ind: Not Reported
Constype Cable Line Ind: Not Reported
Constype Comm line Ind: Not Reported
Constype Commercial Ind: Not Reported
Constype Electrical Line Ind: Not Reported
Constype Gas Line Ind: Not Reported
Constype Industrial Ind: YES
Constype Other Description: Not Reported
Constype Other Ind: Church
Constype Recons Ind: Not Reported
Constype Residential Ind: Not Reported
Constype Transport Ind: Not Reported
Constype Utility Description: Not Reported
Constype Utility Ind: Not Reported
Constype Water Sewer Ind: Not Reported
Dir Discharge Us Water Ind: Not Reported
Receiving Water Name: Mojave River
Certifier Name: Not Reported
Certifier Title: Not Reported
Certification Date: Not Reported
Primary SIC: Not Reported
Secondary SIC: Not Reported
Tertiary SIC: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.03 miles S | 3632 ft | 2 |
| **SITE NAME** | | | **MAPS** | **ID** |
| High Desert Truck and Trailer | | | 1,4 | 10400761 |
| **ADDRESS** | | | **CITY** | **ZIP** |

| 8995 Three Flags Ave | Hesperia | 92345 |
|---|---|---|

## DETAILS

General Program & Facility Information
CERS ID: 10400761
Facility ID: FA0016142
Facility Regulator Key ID: FA0016142
Organization Code: 90363385
Business/Organization Name: Velocity Vehicle Group (VVG)
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business CERS User Accounts: 9
Facility Count for Business: 16
Last Submittal Date (any element): 7/9/2018 8:28:02 AM
Count of Submitted Elements: 21
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 15
Property Owner Name: Brad Fauvre & Conan Barker
Property Owner Phone Number: (562) 447-1203
Property Owner Mailing Address: 2429 Peck Road
Property Owner Mailing City: Whittier
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 90601
Property Owner Mailing Country: United States

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 12/14/2016
Hazardous Waste Generator (HW) Last Inspection Date: 12/14/2016
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported

Phone Number: (909) 510-4185
Fax Number: (562) -447-1559
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: Not Reported
NAICS Code: Not Reported
Mailing Address: 8995 Three Flags Ave.
Mailing Address City: Hesperia
Mailing Address State Code: CA
Mailing Address Zip Code: 92345
Operator Name: Ronnie Bullocks
Operator Phone Number: (909) 510-4186
Owner Name: Brad Fauvre & Conan Barker
Owner Phone: (562) 447-1203
Owner Mailing Address: 2429 Peck Road
Owner City: Whittier
Owner State: CA
Owner Zip Code: 90601
Owner Country: United States
Environmental Contact Name: Devin Beck
Environmental Contact Phone Number: 909-510-4272
Environmental Contact Mailing Address: 2429 S. Peck Rd
Environmental Contact Email Address: dbeck@vvgtruck.com
Environmental Contact City: Whittier
Environmental Contact State: CA
Environmental Contact Zip: 90601
Environmental Contact Country: United States
Primary Emergency Contact Name: Ronnie Bullocks
Primary Emergency Contact Title: Service Manager
Primary Emergency Contact Business Phone Number: (909) 510-4185
Primary Emergency Contact 24Hr Phone: (760) -948-6442
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Laki Daniels
Secondary Emergency Contact Title: Assistant Manager
Secondary Emergency Contact Business Phone: (909) 510-4181
Secondary Emergency Contact 24Hr Phone: Not Reported
Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Devin Beck
Identification Signer Name: Devin Beck
Identification Signer Title: Safety and Environmental Manager
Billing Contact Name: Ronnie Bullocks
Billing Contact Phone: (909) 510-4186
Billing Contact Email: rbullocks@lafreightlner.com
Billing Address: 8995 Three Flags Ave.
Billing City: Hesperia
Billing State: CA
Billing Zip: 92345

Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000328679
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 4/25/2018 2:37:31 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 4/10/2018 10:53:14 AM
BP Owner/Operator Last Updated Date: 4/10/2018 10:53:14 AM
Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Alexander Israel, aisrael@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.41426
Agency Provided Longitude: -117.39427
Horizontal Accuracy: 50
Horizontal Collection Method: Address Matching
Geographic Reference Point: Facility Center/Centroid
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 5/18/2015 1:21:33 AM

Submittal Element Regulator Information
CUPA Regulator Code: 3600

Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 7/9/2018 8:28:02 AM
Facility Info Accepted Date: 6/14/2018 10:32:11 AM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 4/25/2018 2:37:31 PM
Inventory Last Accepted Date: 7/6/2018 2:57:22 PM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 7/9/2018 8:28:02 AM
ER Training Last Accepted Date: 7/19/2017 1:52:19 PM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported
APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: CAL000328679
RCRA LQG: No
Violation Date: 12/14/2016
Violation Type Number: 1010002
Class: Minor
Scheduled Return to Compliance Date: 1/13/2017
Actual Return to Compliance Date: Not Reported
Actual Return to Compliance Qualifier: Not Reported
Violation Comment: Hazardous Materials Business Plan (HMBP) submitted on CERS on 7/20/2016 was incomplete, inaccurate, and/or not current. Hazardous Materials Inventory and Facility Site Map was not complete or accurate. There were hazardous materials that was not disclosed previously.Emergency Response / Contingency and Employee Training Plan was not submitted in CERS.
Violation Category: Administration/Documentation
Violation Name: Hazardous Materials Business Plan Submittal
Violation Description: Failure to complete and electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.
Violation Citation(s): HSC 6.95 25505, 25508(a)(1)

Violation Date: 12/14/2016
Violation Type Number: 1010006
Class: Class 2
Scheduled Return to Compliance Date: 1/13/2017
Actual Return to Compliance Date: Not Reported
Actual Return to Compliance Qualifier: Not Reported
Violation Comment: There were undisclosed hazardous materials at or above reportable quantities.
Violation Category: Administration/Documentation
Violation Name: Business plan updates
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:A 100 percent or more increase in the quantity of a previously disclosed material.Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name.  A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Citation(s): HSC 6.95 25508.1(a)-(f)

HMRRP & UST Inspection Information
EPA ID: CAL000328679
RCRA LQG: No
Inspection Date: 12/14/2016
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 1
Number of Minor Violations: 1
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported

Days Out of Compliance: 734
Violation Details Available: Yes
Inspection Comments: HANDLER INSPECTION

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 12/14/2016
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported
Docket Number: Not Reported
Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 1
Count of Linked Minor Violations: 1
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.03 miles S | 3632 ft | 2 |
| **SITE NAME** | | | **MAPS** | **ID** |
| High Desert Truck and Trailer | | | 1,4 | 169689 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8995 THREE FLAGS AVE | | | HESPERIA | 92345 |

## DETAILS

Site Regulated Program Information
Site ID: 169689
Site EI ID: 10400761
Agency Provided Latitude: 34.41426
Agency Provided Longitude: -117.39427

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 12/14/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): GENERATOR INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 12/14/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 12/14/2016
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.
Violation Note(s): Hazardous Materials Business Plan (HMBP) submitted on CERS on 7/20/2016 was incomplete, inaccurate, and/or not current. Hazardous Materials Inventory and Facility Site Map was not complete or accurate. There were hazardous materials that was not disclosed previously. Emergency Response / Contingency and Employee Training Plan was not submitted in CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to establish a Contingency Plan (CCR 66265.51(a)) Hazardous waste contingency plan has not been establish / submitted in California Environmental Reporting System (CERS).
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.

A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Note(s): There were undisclosed hazardous materials at or above reportable quantities.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to manage hazardous waste lawfully (CHSC 25154) Hazardous waste was not managed lawfully. Compliance Requirement: Submit 3-weeks worth of hazardous waste weekly inspection to this Division.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to note accumulation start date on labels (CCR 66262.34(f)(2)) Accumulation start date missing on waste oily solids container.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to operate and maintain facility to prevent a fire, spill or release (CCR 66265.31) Observed oil accumulation in secondary containment; spills on shop floor.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to complete hazardous waste labels (CCR 66262.34(f)(3)) Accumulation start date missing on waste oily solids container. Compliance Requirement: Submit a signed statement indicating that all hazardous waste containers have been properly labeled.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Training - General
Violation Note(s): Returned to compliance on 12/14/2016. Failure to train facility personnel in hazardous waste management procedures (CCR 66265.16) Employee training documentation not documented and / or available for review. Provided at end of inspection.

Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Hazardous waste accumulation time exceeded (CCR 66262.34(a)) Hazardous waste accumulation time exceeded for waste oily water. Last pick 6/4/14.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 12/14/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 01/09/2017. Failure to keep hazardous waste containers closed when not in active use (CCR 66265.173(a)) Bung caps were missing on used oil drums.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 12/14/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 12/14/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| | | | | |

| FRS-US | Listed | 0.03 miles S | 3632 ft | 2 |
|---|---|---|---|---|
| **SITE NAME** | | | **MAPS** | **ID** |
| VVG FACILITY #7 | | | 1,4 | 110065650352 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8995 THREE FLAGS AVE | | | HESPERIA | 92345 |

**DETAILS**

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065650352
Create Date: 13-OCT-2015 12:56:11
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.03 miles S | 3632 ft | 2 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Tanks Ent LLC | | | 1,4 | 278713 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8995 Three Flags Avenue | | | Hesperia | 92345 |

**DETAILS**

Original Database: NPDES-SW-CA
Last Agency Status: Listed
Archive Date: 06/01/16
No Longer Listed-Registered Meas ID: 278713
Registered Meas Type: Construction
WDID: 6B36C335897
Received Date: 5/9/2008
Processed Date: 8/5/2005
Termination Date: 6/7/2010
Status Code Name: Terminated
Status Date: 6/16/2010
REGION: Not Reported
County Code: 36
Place Size: 1
Place Size Unit: Acres
Facility County: San Bernardino
Facility Contact Name: Rob Immerman

Facility Contact Title: Not Reported
Facility Contact Phone: 714-904-0994
Facility Contact Phone Extension: Not Reported
Facility Contact Email Address: Not Reported
Operator Name: Tanks Ent LLC
Operator Address: 14530 Whittier Blvd
Operator City: Whittier
Operator State: California
Operator Zip: 90605
Operator Contact Name: Brian Tanklage
Operator Contact Title: Not Reported
Operator Contact Phone: 562-902-1070
Operator Contact Phone Extension: Not Reported
Operator Contact Email Address: Not Reported
Operator Type: Other
Developer Name: Facility Builders
Developer Address: 3940 E Miraloma Ave
Developer City: Anaheim
Developer State: California
Developer Zip: 92806
Developer Contact Name: Susan Thomson
Developer Contact Title: Not Reported
Constype Linear Utility Ind: Not Reported
Emergency Phone Number: 714-904-0994
Emergency phone Number Extension: Not Reported
Constype Aboveground Ind: Not Reported
Constype Belowground Ind: Not Reported
Constype Cable Line Ind: Not Reported
Constype Comm line Ind: Not Reported
Constype Commercial Ind: YES
Constype Electrical Line Ind: Not Reported
Constype Gas Line Ind: Not Reported
Constype Industrial Ind: YES
Constype Other Description: Not Reported
Constype Other Ind: Not Reported
Constype Recons Ind: Not Reported
Constype Residential Ind: Not Reported
Constype Transport Ind: Not Reported
Constype Utility Description: Not Reported
Constype Utility Ind: Not Reported
Constype Water Sewer Ind: Not Reported
Dir Discharge Us Water Ind: Not Reported
Receiving Water Name: Mojave River
Certifier Name: Susan Thomson
Certifier Title: Project Coordinator
Certification Date: 03-AUG-05 12.00.00.000000 AM
Primary SIC: Not Reported
Secondary SIC: Not Reported
Tertiary SIC: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| HWIS-CA | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| HIGH DESERT TRUCK & TRAILER | 1,4 | CAL000320679 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8995 THREE FLAGS AVE STE B&C | VICTORVILLE | 92344 |

## DETAILS

Facility Information
EPA ID: CAL000320679
Facility County: 36
Mailing Street: 2429 S PECK RD
Mailing City: WHITTIER
Mailing State: CA
Mailing Zip: 906010000
Contact Name: DEVIN BECK
Contact Phone: Not Reported

Generator Details
Year: 2019
TONS: Not Reported
TSD EPA ID: AZR000521146
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2019
TONS: Not Reported
TSD EPA ID: CAT080013352
Category Code: 223
Category Description: Unspecified oil-containing waste
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT

Year: 2019
TONS: Not Reported
TSD EPA ID: CAT080013352
Category Code: 343
Category Description: Unspecified organic liquid mixture
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION,

ORGANICS RECOVERY ECT

Year: 2019
TONS: Not Reported
TSD EPA ID: AZR000515924
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2019
TONS: Not Reported
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2019
TONS: Not Reported
TSD EPA ID: CAT080025711
Category Code: 223
Category Description: Unspecified oil-containing waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| HIGH DESERT TRUCK & TRAILER | 1,4 | CAL000320679 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8995 THREE FLAGS AVE STE B&C | VICTORVILLE | 92344 |

## DETAILS

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000320679
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: NEW CAR DEALERS
Active Site Indicator: H----

Owner Name: LOS ANGELES TRUCK SERVICE LLC
Operator Name: DEVIN BECK
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20070613
Acknowledge Flag Date: 20070613
Contact First Name: DEVIN
Contact Last Name: BECK
Contact Street 1: 2429 S. PCK RD.
Contact City: WHITTIER
Contact State: CA
Contact Zip: 90601-0000
Contact Phone: 909-510-4272
Contact E-mail Address: DBECK@VVGTRUCK.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.04 miles W | 3623 ft | 3 |

| SITE NAME | MAPS | ID |
|---|---|---|
| THE LITZENBERGER COMPANY | 1,4 | FA0011408-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 POPLAR ST 14 | HESPERIA | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0011408
Address2: Not Reported
Owner Information: LITZENBERGER, TROY
Contact Name: TROY LITZENBERGER
Mailing Address: P.O. BOX 943, WRIGHTWOOD, CA 92397-0943
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0019744
Program Element Code: 4221
Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES
Status: INACTIVE
To: 2/28/2013

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles W | 3627 ft | 4 |

| SITE NAME | MAPS | ID |
|---|---|---|
| Superior Pool Products LLC #548A | 1,4 | 10762693 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 Poplar St Bldg E | Hesperia | 92344 |

## DETAILS

General Program & Facility Information
CERS ID: 10762693
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90713275
Business/Organization Name: Superior Pool Products LLC #548A
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 1
Last Submittal Date (any element): Not Reported
Count of Submitted Elements: 0
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 4
Property Owner Name: JT & LT Family LLC
Property Owner Phone Number: 714-981-3623
Property Owner Mailing Address: 310 Goetz Avenue
Property Owner Mailing City: Santa Ana
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92707
Property Owner Mailing Country: United States

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported

Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: Not Reported
Hazardous Waste Generator (HW) Last Inspection Date: Not Reported
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: 5/2/2018
Ending Date: 5/1/2019
Phone Number: 760-981-0159
Fax Number: 760-513-9803
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 5091
NAICS Code: 423910
Mailing Address: 109 Northpark Blvd., Suite 123
Mailing Address City: Covington
Mailing Address State Code: LA
Mailing Address Zip Code: 70433
Operator Name: Superior Pool Products LLC
Operator Phone Number: 760-981-0159
Owner Name: Superior Pool products LLC
Owner Phone: 985-892-5521
Owner Mailing Address: 109 Northpark Blvd., Suite 400
Owner City: Covington
Owner State: LA
Owner Zip Code: 70433
Owner Country: United States
Environmental Contact Name: Annetter Niemiec
Environmental Contact Phone Number: 985-801-5714
Environmental Contact Mailing Address: 109 Northpark Blvd., Suite 123
Environmental Contact Email Address: annette.niemiec@poolcorp.com
Environmental Contact City: Covington
Environmental Contact State: LA
Environmental Contact Zip: 70433
Environmental Contact Country: United States
Primary Emergency Contact Name: Jacob Lynch
Primary Emergency Contact Title: Sales Center Manager
Primary Emergency Contact Business Phone Number: 760-981-0159
Primary Emergency Contact 24Hr Phone: 951-675-3133
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Not Reported
Secondary Emergency Contact Title: Not Reported
Secondary Emergency Contact Business Phone: Not Reported
Secondary Emergency Contact 24Hr Phone: Not Reported

Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Annette Niemiec
Identification Signer Name: Annette Niemiec
Identification Signer Title: EPA Government Relations Coordinator
Billing Contact Name: Annette Niemiec
Billing Contact Phone: 985-801-5714
Billing Contact Email: annette.niemiec@poolcorp.com
Billing Address: 109 Northpark Blvd., Suite 123
Billing City: Covington
Billing State: LA
Billing Zip: 70433
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: Not Reported
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): N
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: Not Reported
Submittal Action: Draft
BP Activities Last Updated Date: 5/2/2018 9:07:20 AM
BP Owner/Operator Last Updated Date: 5/2/2018 9:16:58 AM
Submittal Action Comment 1: Not Reported
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.41542
Agency Provided Longitude: -117.39679
Horizontal Accuracy: 10
Horizontal Collection Method: Address Matching

Geographic Reference Point: Facility Center/Centroid
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 5/2/2018 8:43:30 AM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: Not Reported
Facility Info Accepted Date: Not Reported
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: Not Reported
Inventory Last Accepted Date: Not Reported
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: Not Reported
ER Training Last Accepted Date: Not Reported
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported

APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
: Not Reported
HMRRP & UST Inspection Information
: Not Reported
HMRRP & UST Enforcement Information
: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles W | 3627 ft | 4 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Superior Pool Products LLC #548A | | | 1,4 | 437884 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12221 POPLAR ST BLDG E | | | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 437884
Site EI ID: 10762693
Agency Provided Latitude: 34.41542
Agency Provided Longitude: -117.39679

Program Description: Chemical Storage Facilities

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported

:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AIR-DIST-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| Zippy Lube | 1,4 | 842-MD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 Three Flags Avenue | Hesperia | 92345 |

## DETAILS

Note: This is an ERS assigned ID.
Responsible Agency: Mohave Valley AQMD
Permit Number: T010147
Facility ID: 3040
District ID: 1
Permit Type: T
Permit Status Code: PTO
Permit Status: Permit To Operate
Permit Desc: WASTE OIL TANK
Employee Assigned: 62
Address Region: Not Reported
Fax Nbr: Not Reported
Emission Calc: Not Reported
Expired Date: 3/31/2018 11:59:59 PM
Under Construction: False
Last Renewal Date: Not Reported
Secondary APC: Not Reported
Primary APC: Not Reported
Est Comp Date: Not Reported
Est Start Date: Not Reported
Issue Date: 9/20/2017 6:27:00 PM
Application Date: 3/13/2008
Permit Printed: True
Batch Update: False
Permit Detail Type: S
Title VPMTwo: False
Confidential: False
Application Nbr: 9620
SCCCode: 30630006

Title VSOX: False
Permit ID: 9381
Title VSynthetic Minor80: False
Title VVOC: False
Title VSynthetic Minor: False
Belongs To Capacity Rating: 13
Title VPMTen: False
Title VNOX: False
Title VLead: False
Title VHS: False
Title VGHG: False
Billing Capacity: 1
Title VCO: False
Title V1200B1e: False
NSRPMTwo: False
Title V1200B1d: False
NSRVOC: False
NSRSOX: False
NSRPMTen: False
NSRHS: False
NSRNOX: False
NSRLead: False
NAICS: 811191
Agency Provided Facility Longitude: Not Reported
Agency Provided Facility Latitude: Not Reported
Title VFacility: N
FONA: True
AB2588Facility: Not Reported
Last Modified: 7/12/2012
Address Street2: Not Reported
Facility Creation Date: 12/31/1969
Expire Month: 3
Active Flag: A
auto Schedule Status Flag: Y
Inspection Status Flag: Not Reported
Inspection Time: 1
Paper Work Time: 0.5
Zone ID: 8
Expiration Month: 3
Level2Inspection: False
UTM: 473E/3808N
SIC Code: 7538
Principal Product: Waste Oil
Phone Number: 424-832-0217
Operating Weeks: 50
Operating Hours: 8
Operating Days: 5
Size Acres: 0
Number of Employees: 0
Near School: False

Facility Description: Zippy Lube
Facility Note: Not Reported
Equipment Description: 1,000 Gallon Tank; Facility Elevation is 3664 feet

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AIR-DIST-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| IRONMAN RENEWAL LLC | 1,4 | 177957-SC |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS | HESPERIA | 92345 |

## DETAILS

District: South Coast AQMD
Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=177957
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 177957
County Code: SB
County: San Bernardino
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: YAMIL
Facility Representative Last Name: TOMASSINI
Location Area Code: 951
Location Phone Number: 5202995
Location Phone Extension: Not Reported
Mailing Address: 2535 ANSELMO DR
Mailing City: CORONA
Mailing State: CA
Mailing Zip Code: 92879
Mailing Zip Code Extension: 8092
Mailing Area Code: 951
Mailing Phone Number: 5202995
Mailing Phone Extension: Not Reported
Mailing Representative First Name: YAMIL
Mailing Representative Last Name: TOMASSINI

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|

| AST-CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |
|---|---|---|---|---|
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1,4 | 172882 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 172882
EI ID: 10049617
Agency Provided Address: 8899 THREE FLAGS AVE
Agency Provided Latitude: 34.413147

Agency Provided Longitude: -117.39313
Program Description: Aboveground Petroleum Storage

Evaluation Information (2017 to present)
Evaluation Date: 3/10/2020
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 3/10/2020
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 3/10/2020
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE APSA INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE GENERATOR INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Violation Information (2017 to present)
Violation Date: 3/10/2020
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Note(s): Returned to compliance on 04/08/2020. OBSERVATION: Facility failed to annually re-certify a complete business plan in CERS. Last submittal was dated 07/10/2019 (inventory element), 04/16/2018 (emergency response element) and 08/08/2018 (APSA element). CORRECTIVE ACTION: Review and certify the business plan via CERS. Your CERS ID number is 10049617.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 3/10/2020
Citation: HSC 6.67 25270.4.5 (a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5 (a)
Violation Description: Failure to include in the SPCC plan an adequate description of employee training. Training shall address, at a minimum: operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; content of the facility SPCC plan; and annual discharge prevention briefings for oil-handling personnel to assure adequate understanding of the SPCC plan.

Violation Note(s): Returned to compliance on 10/20/2020. OBSERVATION: Facility failed to include in the SPCC plan adequate training for oil-handling personnel. CORRECTIVE ACTION: Submit a signed statement indicating that the SPCC plan has been

revised to training for oil-handling personnel.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 3/10/2020
Citation: HSC 6.5 25201 - California Health and Safety Code, Chapter 6.5, Section(s) 25201
Violation Description: Failure to obtain a permit or grant of interim status after generator has accumulated hazardous waste on-site for longer than 90 days.
Violation Note(s): Returned to compliance on 10/20/2020. OBSERVATION: (1) 55 gallon drum and (1) 100 gallon container of used antifreeze were observed with an accumulation start date of 05/13/2017 and 06/11/2019 and a manifest/receipt demonstrating disposal within the past 90 days was not available. CORRECTIVE ACTION: Dispose of the used antifreeze and submit a copy of the manifest/receipt to the CUPA.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 3/10/2020
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violation Note(s): Returned to compliance on 10/20/2020. OBSERVATION: Training documents related to hazardous materials and hazardous waste safety handling were not prpvided. CORRECTIVE ACTION: Conduct initial and annual employee training and maintain training records for a minimum of three years. Submit a signed statement indicating that training has been conducted and that training records will be kept on site for review.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 3/10/2020
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to properly close tanks when making a claim of "permanently closed."

Violation Note(s): Returned to compliance on 10/20/2020. OBSERVATION: (2) 230 gallon and (2) 240 gallon empty tanks acquired from another location have not been properly closed. CORRECTIVE ACTION: Submit photographs indicating that the tanks have been properly closed with a "permanently closed" label and the date they were closed.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 3/10/2020
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to designate person who reports to management as accountable for discharge prevention at facility.

Violation Note(s): Returned to compliance on 10/20/2020. OBSERVATION: The designated person in charge stated in the SPCC plan, Jake Sanchez, is no longer employed at the facility and an updated person has not been assigned. CORRECTIVE ACTION: Submit a signed statement indicating that a person who reports to facility management has been designated as

accountable for discharge prevention.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/9/2017
Citation: Un-Specified
Violation Description: Business Plan Program - Administration/Documentation - General Local Ordinance
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.67 25270.6(a)(1), 25270.6(a)(2) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(a)(1), 25270.6(a)(2)
Violation Description: Failure to submit a tank facility statement on or before January 1 annually unless a current Business Plan has been submitted.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Administration/Documentation - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.67 25270.6(b) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(b)
Violation Description: Failure to pay the APSA Program fee.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22
Violation Description: Failure to properly manage used oil and/or fuel filters in accordance with the requirements.
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW

Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Training - General
Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection

Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: APSA
Enforcement Action Source: CERS

Enforcement Action Date: 11/14/2013
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Coordinate Information
Program ID: 10049617
ENV INT Type Code: HWG
Coordinate Name: Not Reported
Reference Point Type Description: Unknown
Agency Provided Latitude: 34.413139
Agency Provided Longitude: -117.39312

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles S | 3634 ft | **5** |
| **SITE NAME** | | | **MAPS** | **ID** |
| Little Sister's Truck Wash | | | 1,4 | 10128901 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 Three Flags Ave | | | Hesperia | 92344 |

## DETAILS

General Program & Facility Information
CERS ID: 10128901

Facility ID: FA0010378
Facility Regulator Key ID: FA0010378
Organization Code: 90093058
Business/Organization Name: Little Sister's Truck Wash
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 3
Last Submittal Date (any element): 2/12/2018 11:31:19 PM
Count of Submitted Elements: 18
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 24
Property Owner Name: Renald Anelle
Property Owner Phone Number: 760-731-3170
Property Owner Mailing Address: 25 Rollingview Lane
Property Owner Mailing City: Fallbrook
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92028
Property Owner Mailing Country: United States

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 6/3/2016
Hazardous Waste Generator (HW) Last Inspection Date: 6/3/2016
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: 7609474448
Fax Number: 760-731-7020
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 7542

NAICS Code: Not Reported
Mailing Address: 25 Rollingview Lane
Mailing Address City: Fallbrook
Mailing Address State Code: CA
Mailing Address Zip Code: 92028
Operator Name: Little Sister's Truck Wash, Inc.
Operator Phone Number: 760-731-3170
Owner Name: Little Sister's Truck Wash, Inc.
Owner Phone: 760-731-3170
Owner Mailing Address: 25 Rollingview Lane
Owner City: Fallbrook
Owner State: CA
Owner Zip Code: 92028
Owner Country: United States
Environmental Contact Name: Renald J. Anelle
Environmental Contact Phone Number: 760-731-3170
Environmental Contact Mailing Address: 25 Rollingview Lane
Environmental Contact Email Address: lstwren@gmail.com
Environmental Contact City: Fallbrook
Environmental Contact State: CA
Environmental Contact Zip: 92028
Environmental Contact Country: United States
Primary Emergency Contact Name: Renald Anelle
Primary Emergency Contact Title: President
Primary Emergency Contact Business Phone Number: 760-420-8500
Primary Emergency Contact 24Hr Phone: 760-731-3170
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Joe McFann
Secondary Emergency Contact Title: Senior Manager
Secondary Emergency Contact Business Phone: (760) 420-6520
Secondary Emergency Contact 24Hr Phone: (760) 420-6520
Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Renald Anelle
Identification Signer Name: Renald Anelle
Identification Signer Title: President
Billing Contact Name: Renald J. Anelle
Billing Contact Phone: 7607313170
Billing Contact Email: lstwren@gmail.com
Billing Address: 25 Rollingview Lane
Billing City: Fallbrook
Billing State: CA
Billing Zip: 92028
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000353253

Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 2/12/2018 11:31:19 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 2/12/2018 11:29:49 PM
BP Owner/Operator Last Updated Date: 2/12/2018 11:29:49 PM
Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Nancy Schlotthauer, nschlotthauer@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 37.271881
Agency Provided Longitude: -119.270233
Horizontal Accuracy: 10
Horizontal Collection Method: Interpolation
Geographic Reference Point: Facility Boundary
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 2/28/2011 5:30:00 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 2/12/2018 11:31:19 PM
Facility Info Accepted Date: 3/15/2018 3:11:48 PM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable

Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 2/12/2018 11:31:19 PM
Inventory Last Accepted Date: 3/15/2018 3:12:00 PM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 2/12/2018 11:31:19 PM
ER Training Last Accepted Date: 3/15/2018 3:12:24 PM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported
APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information

EPA ID: CAL000353253
RCRA LQG: No
Violation Date: 6/3/2016
Violation Type Number: 1010008
Class: Class 2
Scheduled Return to Compliance Date: 7/3/2016
Actual Return to Compliance Date: 6/6/2016
Actual Return to Compliance Qualifier: Documented
Violation Comment: COMPLIANCE ACTIVITY: CERTIFICATE OF COMPLIANCE SIGNED 06/06/2016--OBSERVATION: THE BUSINESS PLAN INFORMATION LISTED IN CERS, MUST BE UPDATED BY MARCH 1 OF EVERY YEAR. CERS WAS LAST UPDATED ON 11/11/2014.COMPLIANCE REQUIREMENT: UPDATED CERS INFORMATION.
Violation Category: Administration/Documentation
Violation Name: Annual Review / Certification
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Citation(s): HSC 6.95 25508(a)(1), 25508.2

Violation Date: 7/23/2013
Violation Type Number: 1010002
Class: Minor
Scheduled Return to Compliance Date: 8/24/2013
Actual Return to Compliance Date: 7/24/2013
Actual Return to Compliance Qualifier: Documented
Violation Comment: Not Reported
Violation Category: Administration/Documentation
Violation Name: Hazardous Materials Business Plan Submittal
Violation Description: Owner/Operator failed to complete and/or submit a Hazardous Materials Business Plan when storing hazardous materials at or above the thresholds quantities of 55 gallons/500 lbs/200 cubic feet.
Violation Citation(s): 19 CCR 4 2729.2(a); HSC 6.95 25505(a)

HMRRP & UST Inspection Information
EPA ID: CAL000353253
RCRA LQG: No
Inspection Date: 6/3/2016
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 1
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 6/6/2016
Days Out of Compliance: 3
Violation Details Available: Yes
Inspection Comments: LITTLE SISTERS- CUPA HANDLER INSPECTION

Inspection Date: 7/23/2013
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 1

Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 7/24/2013
Days Out of Compliance: 1
Violation Details Available: Yes
Inspection Comments: insp

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 6/3/2016
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported
Docket Number: Not Reported
Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 1
Count of Linked Minor Violations: 0
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1,4 | 10049617 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 Three Flags Ave | | | Hesperia | 92344 |

## DETAILS

General Program & Facility Information
CERS ID: 10049617
Facility ID: FA0009125
Facility Regulator Key ID: FA0009125
Organization Code: 90135682

Business/Organization Name: ZIPPY LUBE
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 6
Last Submittal Date (any element): 8/8/2018 10:46:18 AM
Count of Submitted Elements: 20
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 2
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: 1/9/2017
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 1/9/2017
Hazardous Waste Generator (HW) Last Inspection Date: 1/9/2017
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: 949 412-4894
Fax Number: 951-848-0713
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: Not Reported
NAICS Code: Not Reported
Mailing Address: 8899 Three Flags Ave.
Mailing Address City: Hesperia

Mailing Address State Code: CA
Mailing Address Zip Code: 92345
Operator Name: Zippy Lube
Operator Phone Number: 949 412-5059
Owner Name: Renald Anelle
Owner Phone: 949 627-4644
Owner Mailing Address: P.O. Box 1530
Owner City: Bonsall
Owner State: CA
Owner Zip Code: 92003
Owner Country: United States
Environmental Contact Name: Christina Ross
Environmental Contact Phone Number: 951 228-8826
Environmental Contact Mailing Address: P.O. Box 7509
Environmental Contact Email Address: christina.ross@fleetcrew.com
Environmental Contact City: Laguna Niguel
Environmental Contact State: CA
Environmental Contact Zip: 92607
Environmental Contact Country: United States
Primary Emergency Contact Name: Raul Carrillo
Primary Emergency Contact Title: Manager
Primary Emergency Contact Business Phone Number: (949) 482-5197
Primary Emergency Contact 24Hr Phone: (949) 482-5197
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Rodrigo Morales
Secondary Emergency Contact Title: Manager
Secondary Emergency Contact Business Phone: 949 482-5192
Secondary Emergency Contact 24Hr Phone: 949 482-5192
Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Christina Ross
Identification Signer Name: Christina Ross
Identification Signer Title: Environmental Contact
Billing Contact Name: A/R
Billing Contact Phone: 949 412-4894
Billing Contact Email: vivian.lam@fleetcrew.com
Billing Address: P.O. Box 7509
Billing City: Laguna Niguel
Billing State: CA
Billing Zip: 92607
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000416670
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N

Own or Operator APSTs? (Y/N): Y
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 1/17/2017 12:44:16 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 1/17/2017 12:44:01 PM
BP Owner/Operator Last Updated Date: 1/17/2017 12:44:01 PM
Submittal Action Comment 1: Thank you for the submittal. This submittal has been verified as complete. Please note it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Kaniz Rahman, krahman@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.413147
Agency Provided Longitude: -117.393135
Horizontal Accuracy: 100
Horizontal Collection Method: Interpolation
Geographic Reference Point: Facility Boundary
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 7/1/2010 7:32:00 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 8/8/2018 10:46:18 AM
Facility Info Accepted Date: 1/21/2017 7:24:26 AM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 7/9/2018 10:03:05 AM
Inventory Last Accepted Date: 1/21/2017 7:24:34 AM
ER Training Regulator Code: 3600

ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 4/16/2018 10:00:43 AM
ER Training Last Accepted Date: 1/21/2017 7:24:42 AM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: 8/8/2018 10:46:18 AM
APSA Last Accepted Date: 1/21/2017 7:24:47 AM
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: CAL000416670
RCRA LQG: No
Violation Date: 1/9/2017
Violation Type Number: 1010004

Class: Minor
Scheduled Return to Compliance Date: 2/24/2017
Actual Return to Compliance Date: 3/30/2017
Actual Return to Compliance Qualifier: Documented
Violation Comment: The hazardous materials inventory submitted 12/16/13 is missing (1) 275 gallon tote of Diesel Exhaust Fluid.
Violation Category: Administration/Documentation
Violation Name: Hazardous materials inventory
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Citation(s): HSC 6.95 25505(a)(1), 25506, 25508(a)(1)

Violation Date: 1/9/2017
Violation Type Number: 1010005
Class: Minor
Scheduled Return to Compliance Date: 2/24/2017
Actual Return to Compliance Date: 3/30/2017
Actual Return to Compliance Qualifier: Documented
Violation Comment: The map submitted on CERS is missing adjacent streets and north orientation.  Update and resubmit on CERS.
Violation Category: Administration/Documentation
Violation Name: Site map
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Citation(s): HSC 6.95 25505(a)(2), 25508(a)(1)

Violation Date: 1/9/2017
Violation Type Number: 1010010
Class: Minor
Scheduled Return to Compliance Date: 2/24/2017
Actual Return to Compliance Date: 3/30/2017
Actual Return to Compliance Qualifier: Documented
Violation Comment: The Emergency Response (ER) Plan contains the incorrect phone number for the Local Unified Program Agency (CUPA).  The correct phone number for the Emergency Response team at the CUPA is (909) 386-8425.  Update the ER Plan and resubmit on CERS.
Violation Category: Administration/Documentation
Violation Name: Emergency response plan and procedures
Violation Description: Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.
Violation Citation(s): HSC 6.95 25505(a)(3), 25508(a)(1)

Violation Date: 1/9/2017
Violation Type Number: 1015
Class: Minor
Scheduled Return to Compliance Date: 2/24/2017
Actual Return to Compliance Date: 3/30/2017
Actual Return to Compliance Qualifier: Documented
Violation Comment: Failure to obtain a CUPA Hazardous Materials Handler permit (SBCC 23.0602(a))CUPA permits expired on 12/31/16.
Violation Category: Administration/Documentation
Violation Name: General Local Ordinance

Violation Description: Business Plan Program - Administration/Documentation - General Local Ordinance
Violation Citation(s): Not Reported

Violation Date: 1/9/2017
Violation Type Number: 1020002
Class: Minor
Scheduled Return to Compliance Date: 2/24/2017
Actual Return to Compliance Date: 3/30/2017
Actual Return to Compliance Qualifier: Documented
Violation Comment: Not Reported
Violation Category: Training
Violation Name: Training Documentation
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.
Violation Citation(s): HSC 6.95 25505(a)(4)

HMRRP & UST Inspection Information
EPA ID: CAL000416670
RCRA LQG: No
Inspection Date: 1/9/2017
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 5
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 3/30/2017
Days Out of Compliance: 80
Violation Details Available: Yes
Inspection Comments: ROUTINE HANDLER INSPECTION

Inspection Date: 11/14/2013
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported
Days Out of Compliance: 1860
Violation Details Available: No
Inspection Comments: zippy lube- hesperia/ oak hills-insp

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 1/9/2017
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported
Docket Number: Not Reported

Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 0
Count of Linked Minor Violations: 5
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-AST-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1,4 | FA0009125-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE B | | | Hesperia | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino Division of Environmental Health Services
Facility ID: FA0009125
Address2: Not Reported
Owner Information: Ren Anelle
Contact Name: Not Reported
Mailing Address: P.O. Box 7509, LAGUNA NIGUEL, CA 92607
Mailing Address2: Not Reported
Permit ID: PT0023266
Program Element Code: 4031
Permit Description: APSA 1,320-10,000 GAL  FAC CAPACITY
Status: ACTIVE
To: 12/31/2018

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| ZIPPY LUBE-A-TRUCK | 1,4 | 172882 |
| **ADDRESS** | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 172882
Site EI ID: 10049617
Agency Provided Latitude: 34.413147
Agency Provided Longitude: -117.39313

Program Description: Aboveground Petroleum Storage

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE GENERATOR INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE APSA INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 1/9/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ROUTINE HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 11/14/2013
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): zippy lube- hesperia/ oak hills-insp
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 11/14/2013
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): zippy lube- hesperia/ oak hills-insp
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 11/14/2013
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): zippy lube- hesperia/ oak hills-insp
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Violation Information
Violation Date: 1/9/2017
Citation: HSC 6.67 25270.6(a)(1), 25270.6(a)(2) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(a)(1), 25270.6(a)(2)
Violation Description: Failure to submit a tank facility statement on or before January 1 annually unless a current Business Plan has been submitted.

Violation Note(s): Returned to compliance on 03/30/2017. A Tank Facility Statement had not been submitted since 12/16/13.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to complete hazardous waste labels (CCR 66262.34(f)(3)) Observed (1) 55 gallon drums of waste grease with an  illegible hazardous waste label.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to keep hazardous waste containers closed when not in active use (CCR 66265.173(a)) Observed (1) 15 gallon drum of used oil that was not currently in use with no lid.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to operate and maintain facility to prevent a fire, spill or release (CCR 66265.31) Failure to operate and maintain facility to prevent release/fire
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.

Violation Note(s): Returned to compliance on 03/30/2017.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.67 25270.6(b) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.6(b)
Violation Description: Failure to pay the APSA Program fee.

Violation Note(s): Returned to compliance on 03/30/2017. CUPA permits expired on 12/31/16.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Training - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to train facility personnel in hazardous waste management procedures (CCR 66265.16) Per operator, hazardous waste management training is regularly conducted, but there was not documentation to this effect. This the site is a Large Quantity Generator (LQG), facility must provide annual hazardous waste management training.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017

Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Administration/Documentation - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to obtain a CUPA Hazardous Waste Generator Permit (SBCC 23.0602(b)(1)) CUPA permits expired on 12/31/16.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to establish and electronically submit an adequate emergency response plan and procedures for a release or threatened release of a hazardous material.

Violation Note(s): Returned to compliance on 03/30/2017. The Emergency Response (ER) Plan contains the incorrect phone number for the Local Unified Program Agency (CUPA). The correct phone number for the Emergency Response team at the CUPA is (909) 386-8425. Update the ER Plan and resubmit on CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: Un-Specified
Violation Description: Business Plan Program - Administration/Documentation - General Local Ordinance
Violation Note(s): Returned to compliance on 03/30/2017. Failure to obtain a CUPA Hazardous Materials Handler permit (SBCC 23.0602(a)) CUPA permits expired on 12/31/16.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to label hazardous waste containers (CCR 66262.34(f)(3)) Observed (1) 55 gallon container of used oil and (1) 55 gallon drum of waste grease with no hazardous waste label.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Note(s): Returned to compliance on 03/30/2017. The hazardous materials inventory submitted 12/16/13 is missing (1) 275 gallon tote of Diesel Exhaust Fluid.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/9/2017

Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22
Violation Description: Failure to properly manage used oil and/or fuel filters in accordance with the requirements.
Violation Note(s): Returned to compliance on 03/30/2017. Observed (4) 55 gallon drums of drained used oil filters with no lid, (2) 55 gallon drained used oil filters with no labels, and (1) 55 gallon drum of drained used oil filters with a label, but no accumulation start date.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 03/30/2017. Failure to note accumulation start date on labels (CCR 66262.34(f)(2)) Observed (1) 55 gallon drum of waste grease with no accumulation start date marked.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/9/2017
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.

Violation Note(s): Returned to compliance on 03/30/2017. The map submitted on CERS is missing adjacent streets and north orientation.  Update and resubmit on CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 11/14/2013
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 11/14/2013. Failure to label hazardous waste containers (CCR 66262.34(f)(3)) corrected on site- operator properly labeled the hazwaste drum
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 11/14/2013
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 11/14/2013. Failure to note accumulation start date on labels (CCR 66262.34(f)(2)) corrected on site- operator properly labeled the hazwaste drum
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 11/14/2013
Citation: 22 CCR 16 66266.130 - California Code of Regulations, Title 22, Chapter 16, Section(s) 66266.130
Violation Description: Failure to properly handle, manage, label, and recycle used oil and fuel filters.
Violation Note(s): Returned to compliance on 11/14/2013. corrected on site- operator properly labeled marked the drained used

oil filter drum for the start date
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 11/14/2013
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Note(s): Returned to compliance on 11/14/2013. Failure to complete hazardous waste labels (CCR 66262.34(f)(3)) corrected on site- operator properly labeled the hazwaste drum
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: APSA
Enforcement Action Source: CERS

Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 1/9/2017
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Enforcement Action Date: 11/14/2013
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Chemical Information

: Not Reported
:Coordinate Information
Program ID: 10049617
ENV INT Type Code: HMBP
Coordinate Name: Not Reported
Reference Point Type Description: Unknown
Agency Provided Latitude: 34.413139
Agency Provided Longitude: -117.393120

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| Little Sister's Truck Wash | 1,4 | 130941 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 130941
Site EI ID: 10128901
Agency Provided Latitude: 37.271881
Agency Provided Longitude: -119.27023

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 6/3/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): LITTLE SISTER'S TRUCK WASK- CUPA WASTE INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 6/3/2016
Violations Found? (Y/N): Yes

Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): LITTLE SISTERS- CUPA HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 7/23/2013
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): insp
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 7/23/2013
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): insp
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 6/3/2016
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Note(s): Returned to compliance on 06/06/2016. COMPLIANCE ACTIVITY: CERTIFICATE OF COMPLIANCE SIGNED 06/06/2016--  OBSERVATION: THE BUSINESS PLAN INFORMATION LISTED IN CERS, MUST BE UPDATED BY MARCH 1 OF EVERY YEAR. CERS WAS LAST UPDATED ON 11/11/2014.  COMPLIANCE REQUIREMENT: UPDATED CERS INFORMATION.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 7/23/2013
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Administration/Documentation - General
Violation Note(s): Returned to compliance on 07/24/2013. Failure to maintain used oil disposal receipts for at least 3 years (CHSC 25160.2(b)(3))
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 7/23/2013
Citation: HSC 6.95 25505(a) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)

Violation Description: Owner/Operator failed to complete and/or submit a Hazardous Materials Business Plan when storing hazardous materials at or above the thresholds quantities of 55 gallons/500 lbs/200 cubic feet.
Violation Note(s): Returned to compliance on 07/24/2013.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 6/3/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 7/23/2013
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Enforcement Action Date: 7/23/2013
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Chemical Information
: Not Reported
:Coordinate Information
Program ID: 10128901
ENV INT Type Code: HMBP
Coordinate Name: Not Reported
Reference Point Type Description: Unknown
Agency Provided Latitude: 34.413139
Agency Provided Longitude: -117.393120

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| | | | | |

| CUPA-CA | Listed | 0.06 miles S | 3634 ft | 5 |
|---|---|---|---|---|
| **SITE NAME** | | | **MAPS** | **ID** |
| Little Sister's Truck Wash | | | 1,4 | FA0010378-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | Hesperia | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0010378
Address2: Not Reported
Owner Information: Little Sister's Truck Wash, Inc.
Contact Name: Not Reported
Mailing Address: 25 Rollingview Lane, Fallbrook, CA 92028
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0017654
Program Element Code: 4244
Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS
Status: ACTIVE
To: 5/31/2019

Permit ID: PT0017973
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1,4 | FA0009125-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE B | | | Hesperia | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0009125
Address2: Not Reported
Owner Information: Ren Anelle
Contact Name: Not Reported
Mailing Address: P.O. Box 7509, LAGUNA NIGUEL, CA 92607
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0015214
Program Element Code: 4454
Permit Description: LARGE QUANTITY GENERATOR
Status: ACTIVE
To: 12/31/2019

Permit ID: PT0015215
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 12/31/2019

Permit ID: PT0023266
Program Element Code: 4031
Permit Description: APSA 1,320-10,000 GAL  FAC CAPACITY
Status: ACTIVE
To: 12/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| LITTLE SISTER'S TRUCK WASH | | | 1,4 | 110066395494 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |

## DETAILS

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066395494
Create Date: 14-OCT-2015 11:18:47
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK, INC. | | | 1,4 | 110033211245 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899B THREE FLAGS AVENUE | | | HESPERIA | 92345- |

**DETAILS**

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110033211245
Create Date: 29-FEB-2008 02:16:06
Program System: UORS
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1,4 | 110066206484 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |

**DETAILS**

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066206484
Create Date: 14-OCT-2015 10:26:38
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | Name Changed | 0.06 miles S | 3634 ft | 5 |
| | | | | |

| SITE NAME | MAPS | ID |
|---|---|---|
| LITTLE SISTERS TRUCK WASH | 1,4 | FA0010378-SBD |
| **ADDRESS** | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | HESPERIA | 92345 |

**DETAILS**

Original Database: CUPA-CA
Last Agency Status: Listed
Archive Date: 06/04/17
Name Changed-County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0010378
Address2: Not Reported
Owner Information: LITTLE SISTER'S TRUCK WASH
Contact Name: Not Reported
Mailing Address: 25 ROLLING VIEW LN, FALLBROOK, CA 92028
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0017654
Program Element Code: 4244
Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS
Status: ACTIVE
To: 5/31/2017

Permit ID: PT0017973
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2017

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | **5** |
| **SITE NAME** | | | **MAPS** | **ID** |
| IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | | | 1,4 | CAL000344771 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | OAK HILLS | 923440497 |

**DETAILS**

Original Database: HWIS-CA
Last Agency Status: Listed
Archive Date: 10/07/21
No Longer Listed-EPA ID: CAL000344771
Facility County: 36
Mailing Street: 2535 ANSELMO DR
Mailing City: ANSELMO
Mailing State: CA
Mailing Zip: 928798092
Contact Name: SAM MCMILLAN
Contact Phone: 9517353710

Year: 2016
TONS: 0.1
TSD EPA ID: AZD081705402
Category Code: 331
Category Description: Off-specification, aged or surplus organics
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2015
TONS: 0.2
TSD EPA ID: AZD081705402
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2015
TONS: 0.231
TSD EPA ID: Not Reported
Category Code: 134
Category Description: Aqueous solution with total organic residues less than 10 percent
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2014
TONS: 0.22935
TSD EPA ID: CAT080013352
Category Code: 223
Category Description: Unspecified oil-containing waste
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT

Year: 2014
TONS: 0.10425
TSD EPA ID: CAD044429835
Category Code: 213
Category Description: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR

(H131-H135)

Year: 2014
TONS: 0.375
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2013
TONS: 0.52125
TSD EPA ID: CAT080013352
Category Code: 222
Category Description: Oil/water separation sludge
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT

Year: 2013
TONS: 0.4
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: Not Reported

Year: 2013
TONS: 0.62935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2013
TONS: 0.265
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2013
TONS: 0.2085
TSD EPA ID: CAT000613893
Category Code: 213
Category Description: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2012

TONS: 0.2085
TSD EPA ID: CAT000613893
Category Code: 213
Category Description: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2012
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2012
TONS: 0.45
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2010
TONS: Not Reported
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: Not Reported

Year: 2010
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2010
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2009
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491

Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | | | 1,4 | 54FDFFFA-CAL000344771 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | OAK HILLS | 92344 |

**DETAILS**

Previous List: HWIS-CA
Archived: 4/2/2012

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ANELLE MANAGEMENT SERVICES INC DBA FLEET CREW | | | 1,4 | CAL000416670 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 923440497 |

**DETAILS**

Original Database: HWIS-CA
Last Agency Status: Listed
Archive Date: 10/07/21
No Longer Listed-EPA ID: CAL000416670
Facility County: 36
Mailing Street: 30025 ALICIA PKWY
Mailing City: LAGUNA NIGUEL
Mailing State: CA
Mailing Zip: 92677
Contact Name: CRAIG PHILLIPS

Contact Phone: 9516600400

Year: 2017
TONS: 1.665
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2017
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2017
TONS: 1.205
TSD EPA ID: AZR000515924
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2016
TONS: 1.405
TSD EPA ID: AZR000515924
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2016
TONS: 0.15
TSD EPA ID: NED981723513
Category Code: 213
Category Description: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Description: INCINERATION--THERMAL DESTRUCTION OTHER THAN USE AS A FUEL

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| HWIS-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| FLEETCREW | | | 1,4 | CAL000416670 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 92344 |

## DETAILS

Facility Information
EPA ID: CAL000416670
Facility County: 36
Mailing Street: "29911 NIGUEL ROAD "
Mailing City: LAGUNA NIGUEL
Mailing State: CA
Mailing Zip: 926070000
Contact Name: CRAIG PHILLIPS
Contact Phone: Not Reported

Generator Details
Year: 2019
TONS: Not Reported
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.06 miles S | 3634 ft | **5** |

| SITE NAME | MAPS | ID |
|---|---|---|
| LITTLE SISTERS TRUCK WASH INC | 1,4 | CAL000353253 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | OAK HILLS | 92344 |

## DETAILS

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000353253
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: CAR WASHES
Active Site Indicator: H----

Owner Name: LITTLE SISTERS TRUCK WASH INC
Operator Name: JOE MCFANN
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20100610
Acknowledge Flag Date: 20100610
Contact First Name: JOE
Contact Last Name: MCFANN
Contact Street 1: 8899 THREE FLAGS AVE
Contact City: OAK HILLS
Contact State: CA
Contact Zip: 92344
Contact Phone: 760-947-4448
Contact FAX: 760-956-1270
Contact E-mail Address: RJA@YELLOWMAGIC.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ANELLE MANAGEMENT SERVICES INC DBA FLEET | | | 1,4 | CAL000416670 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |

## DETAILS

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000416670
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: GENERAL AUTOMOTIVE REPAIR
Active Site Indicator: H----
Owner Name: ANELLE MGMT SRV INC DBA FLEET CREW
Operator Name: CRAIG PHILLIPS
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20160502

Acknowledge Flag Date: 20160502
Contact First Name: CRAIG
Contact Last Name: PHILLIPS
Contact Street 1: 29911 NIGUEL ROAD #7509
Contact City: LAGUNA NIGUEL
Contact State: CA
Contact Zip: 92607-0000
Contact Phone: 951-660-0400
Contact FAX: 951-848-0713
Contact E-mail Address: CRAIG.PHILLIPS@FLEETCREW.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.06 miles W | 3624 ft | 6 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DESERT DYNAMICS OFFROAD | 1,4 | FA0012792-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 POPLAR ST BLDG B-10 | HESPERIA | 92344 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0012792
Address2: Not Reported
Owner Information: LAWSON, DAVE
Contact Name: DAVE LAWSON
Mailing Address: 12221  POPLAR ST  BLDG B-10, HESPERIA, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0022349
Program Element Code: 4221
Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES
Status: INACTIVE
To: 10/31/2010

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.08 miles W | 3628 ft | 7 |

| SITE NAME | MAPS | ID |
|---|---|---|
| 3M OAK HILLS | 1,4 | 10311793 |
| **ADDRESS** | **CITY** | **ZIP** |
| 12221 POPLAR ST UNIT D20 | OAK HILLS | 92344 |

## DETAILS

General Program & Facility Information
CERS ID: 10311793
Facility ID: FA0013596
Facility Regulator Key ID: FA0013596
Organization Code: 90278605
Business/Organization Name: 3M OAK HILLS
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Seeding
Count of Business CERS User Accounts: 3
Facility Count for Business: 2
Last Submittal Date (any element): 3/6/2018 12:28:21 PM
Count of Submitted Elements: 21
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 2
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 9/29/2016
Hazardous Waste Generator (HW) Last Inspection Date: Not Reported
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported

Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: (760) 949-4204
Fax Number: (760) 949-0912
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 3291
NAICS Code: Not Reported
Mailing Address: 8981 US HWY 395
Mailing Address City: OAK HILLS
Mailing Address State Code: CA
Mailing Address Zip Code: 92344
Operator Name: 3M Oak Hills
Operator Phone Number: (760) 949-4204
Owner Name: 3M COMPANY
Owner Phone: (760) 949-4204
Owner Mailing Address: 8981 HWY 395
Owner City: OAK HILLS
Owner State: CA
Owner Zip Code: 92344
Owner Country: United States
Environmental Contact Name: JESSE CAIN
Environmental Contact Phone Number: 760-983-9085
Environmental Contact Mailing Address: 13044 Rocky Trail Way
Environmental Contact Email Address: JCAIN@MMM.COM
Environmental Contact City: Victorville
Environmental Contact State: CA
Environmental Contact Zip: 92395
Environmental Contact Country: United States
Primary Emergency Contact Name: DAN BRAUN
Primary Emergency Contact Title: PLANT MANAGER
Primary Emergency Contact Business Phone Number: (760) 949-4204 2001
Primary Emergency Contact 24Hr Phone: (760) 881-9772
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: SAL BRIONES / ISMAEL MARTINEZ
Secondary Emergency Contact Title: DAY/ NIGHT SUPERVISOR
Secondary Emergency Contact Business Phone: (760) 949-4204 2043
Secondary Emergency Contact 24Hr Phone: (760) 662-0808
Secondary Emergency Contact Pager Number: (760) 983-0380
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: JESSE CAIN
Identification Signer Name: Daniel Braun
Identification Signer Title: Plant Manager
Billing Contact Name: 3M COMPANY

Billing Contact Phone: (760) 949-4204
Billing Contact Email: Not Reported
Billing Address: 8981 US HWY 395
Billing City: OAK HILLS
Billing State: CA
Billing Zip: 92344
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: Not Reported
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): N
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 3/6/2018 12:28:21 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 3/6/2018 12:28:15 PM
BP Owner/Operator Last Updated Date: 3/6/2018 12:28:16 PM
Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Nancy Schlotthauer, nschlotthauer@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.41542
Agency Provided Longitude: -117.39626
Horizontal Accuracy: 50
Horizontal Collection Method: Address Matching
Geographic Reference Point: Facility Center/Centroid

Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 5/17/2015 11:58:10 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 3/6/2018 12:28:21 PM
Facility Info Accepted Date: 4/20/2018 8:32:19 AM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 3/6/2018 12:28:21 PM
Inventory Last Accepted Date: 4/20/2018 8:32:32 AM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 3/6/2018 12:28:21 PM
ER Training Last Accepted Date: 4/20/2018 8:32:28 AM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported
APSA Last Accepted Date: Not Reported

CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: Not Reported
RCRA LQG: No
Violation Date: 9/29/2016
Violation Type Number: 1010006
Class: Class 2
Scheduled Return to Compliance Date: 10/29/2016
Actual Return to Compliance Date: 10/19/2016
Actual Return to Compliance Qualifier: Documented
Violation Comment: Update submitted chemical inventory, facility site map, and emergency response plan.
Violation Category: Administration/Documentation
Violation Name: Business plan updates
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:A 100 percent or more increase in the quantity of a previously disclosed material.Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name. A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Citation(s): HSC 6.95 25508.1(a)-(f)

HMRRP & UST Inspection Information
EPA ID: Not Reported
RCRA LQG: No
Inspection Date: 9/29/2016
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 1
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 10/19/2016
Days Out of Compliance: 20
Violation Details Available: Yes
Inspection Comments: HANDLER INSPECTION

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 9/29/2016
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported

Docket Number: Not Reported
Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 1
Count of Linked Minor Violations: 0
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.08 miles W | 3628 ft | 7 |

| SITE NAME | MAPS | ID |
|---|---|---|
| 3M OAK HILLS | 1,4 | 617 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 POPLAR ST UNIT D20 | OAK HILLS | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 617
Site EI ID: 10311793
Agency Provided Latitude: 34.41542
Agency Provided Longitude: -117.39626

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 9/29/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 9/29/2016
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.
A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Note(s): Returned to compliance on 10/19/2016. Update submitted chemical inventory, facility site map, and emergency response plan.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 9/29/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.08 miles W | 3628 ft | 7 |
| **SITE NAME** | | | **MAPS** | **ID** |
| 3M OAK HILLS | | | 1,4 | FA0013596-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12221 POPLAR ST UNIT D20 | | | OAK HILLS | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0013596

Address2: Not Reported
Owner Information: 3M COMPANY
Contact Name: Not Reported
Mailing Address: 8981 US HWY 395, OAK HILLS, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0023866
Program Element Code: 4244
Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS
Status: ACTIVE
To: 11/30/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles SW | 3642 ft | 8 |

| SITE NAME | MAPS | ID |
|---|---|---|
| High Desert Truck and Trailer | 1,4 | FA0016142-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8895 THREE FLAGS AVE | Hesperia | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0016142
Address2: Not Reported
Owner Information: Brad Fauvre & Conan Barker
Contact Name: Not Reported
Mailing Address: 8995 Three Flags Ave., Hesperia, CA 92345
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0034884
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 8/31/2019

Permit ID: PT0034885
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 8/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.11 miles S | 3641 ft | 9 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DIRECTV | 1,4 | 10312237 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12269 SCARBROUGH CT | HESPERIA | 92345 |

## DETAILS

General Program & Facility Information
CERS ID: 10312237
Facility ID: FA0013884
Facility Regulator Key ID: FA0013884
Organization Code: 90430663
Business/Organization Name: DIRECTV, LLC
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business CERS User Accounts: 41
Facility Count for Business: 37
Last Submittal Date (any element): Not Reported
Count of Submitted Elements: 0
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 110
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported

Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 8/4/2015
Hazardous Waste Generator (HW) Last Inspection Date: Not Reported
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: (760) 561-1567
Fax Number: Not Reported
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 0
NAICS Code: Not Reported
Mailing Address: 12269 SCARBROUGH CT
Mailing Address City: HESPERIA
Mailing Address State Code: CA
Mailing Address Zip Code: 92345
Operator Name: Not Reported
Operator Phone Number: Not Reported
Owner Name: DIRECTV
Owner Phone: (760) 561-1567
Owner Mailing Address: 12269 SCARBROUGH CT
Owner City: HESPERIA
Owner State: CA
Owner Zip Code: 92345
Owner Country: United States
Environmental Contact Name: Not Reported
Environmental Contact Phone Number: Not Reported
Environmental Contact Mailing Address: Not Reported
Environmental Contact Email Address: Not Reported
Environmental Contact City: Not Reported
Environmental Contact State: Not Reported
Environmental Contact Zip: Not Reported
Environmental Contact Country: United States
Primary Emergency Contact Name: Not Reported
Primary Emergency Contact Title: Not Reported
Primary Emergency Contact Business Phone Number: Not Reported
Primary Emergency Contact 24Hr Phone: Not Reported
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Not Reported
Secondary Emergency Contact Title: Not Reported
Secondary Emergency Contact Business Phone: Not Reported
Secondary Emergency Contact 24Hr Phone: Not Reported

Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Not Reported
Identification Signer Name: Not Reported
Identification Signer Title: Not Reported
Billing Contact Name: FACILITIES
Billing Contact Phone: (760) 561-1567
Billing Contact Email: Not Reported
Billing Address: 12269 SCARBROUGH CT
Billing City: HESPERIA
Billing State: CA
Billing Zip: 92345
Billing Country: United States
Business Owner/Operator Regulator Key: OW0011374

Business Activity Information
EPA ID: Not Reported
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): Not Reported
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): Not Reported
Hazardous Waste Generator? (Y/N): Not Reported
Recycles Materials? (Y/N): Not Reported
On-site HW Treatment? (Y/N): Not Reported
Financial Assurance? (Y/N): Not Reported
Remote Waste Consolidation Site? (Y/N): Not Reported
Hazardous Waste Tank Closure? (Y/N): Not Reported
RCRA Large Quantity Generator? (Y/N): Not Reported
Household Hazardous Waste (HHW) Collection? (Y/N): Not Reported
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: Not Reported
Submittal Action: Draft
BP Activities Last Updated Date: 11/27/2012 6:47:55 PM
BP Owner/Operator Last Updated Date: 11/27/2012 6:47:56 PM
Submittal Action Comment 1: Not Reported
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: AD0013554

Supplemental Geographic Information
Agency Provided Latitude: 34.41257
Agency Provided Longitude: -117.39551
Horizontal Accuracy: 50
Horizontal Collection Method: Address Matching

Geographic Reference Point: Facility Center/Centroid
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 5/17/2015 11:58:31 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Not Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: Not Reported
Facility Info Accepted Date: Not Reported
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Not Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: Not Reported
Inventory Last Accepted Date: Not Reported
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Not Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: Not Reported
ER Training Last Accepted Date: Not Reported
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported

APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: Not Reported
RCRA LQG: No
Violation Date: 11/8/2013
Violation Type Number: 1010
Class: Minor
Scheduled Return to Compliance Date: 12/8/2013
Actual Return to Compliance Date: 8/4/2015
Actual Return to Compliance Qualifier: Not Resolvable
Violation Comment: Failure to obtain a CUPA Hazardous Materials Handler permit (SBCC 23.0602(a))
Violation Category: Administration/Documentation
Violation Name: General
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Citation(s): 19 CCR 4 Multiple; HSC 6.95 Multiple

Violation Date: 11/8/2013
Violation Type Number: 1010002
Class: Minor
Scheduled Return to Compliance Date: 12/8/2013
Actual Return to Compliance Date: 8/4/2015
Actual Return to Compliance Qualifier: Not Resolvable
Violation Comment: Not Reported
Violation Category: Administration/Documentation
Violation Name: Hazardous Materials Business Plan Submittal
Violation Description: Owner/Operator failed to complete and/or submit a Hazardous Materials Business Plan when storing hazardous materials at or above the thresholds quantities of 55 gallons/500 lbs/200 cubic feet.
Violation Citation(s): 19 CCR 4 2729.2(a); HSC 6.95 25505(a)

HMRRP & UST Inspection Information
EPA ID: Not Reported
RCRA LQG: No
Inspection Date: 8/4/2015
Inspection Type: Other
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 0
Significant Operational Compliance: Not Reported

Date Returned to Compliance: Not Reported
Days Out of Compliance: 1232
Violation Details Available: No
Inspection Comments: INSPECTION - CLOSURE

Inspection Date: 11/8/2013
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 2
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 8/4/2015
Days Out of Compliance: 634
Violation Details Available: Yes
Inspection Comments: inspection report

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 11/8/2013
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported
Docket Number: Not Reported
Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 0
Count of Linked Minor Violations: 2
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| CDM CONSTRUCTORS INC. | | | 1,4 | FA0008728-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0008728
Address2: Not Reported
Owner Information: CDM CONSTRUCTORS INC.
Contact Name: JOYCE JACKSON
Mailing Address: 12269 SCARBROUGH COURT, HESPERIA, CA 92345-0000
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0015514
Program Element Code: 4221
Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES
Status: INACTIVE
To: 12/31/2006

Permit ID: PT0015515
Program Element Code: 4202
Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Status: INACTIVE
To: 12/31/2004

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| DIRECTV | | | 1,4 | FA0013884-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0013884
Address2: Not Reported
Owner Information: DIRECTV
Contact Name: Not Reported
Mailing Address: 12269 SCARBROUGH CT, HESPERIA, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported

Permit ID: PT0024398
Program Element Code: 4241
Permit Description: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Status: INACTIVE
To: 9/30/2012

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| 3M OAK HILLS REMOTE STORAGE | | | 1,4 | FA0012098-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0012098
Address2: Not Reported
Owner Information: 3M COMPANY
Contact Name: 3M OAK HILLS
Mailing Address: 8981 US HWY 395, HESPERIA, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0021294
Program Element Code: 4250
Permit Description: HAZMAT HANDLER - UNSTAFFED REMOTE FACILITY
Status: INACTIVE
To: 3/31/2011

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.12 miles SW | 3643 ft | 10 |
| **SITE NAME** | | | **MAPS** | **ID** |
| RV Supply Center, Inc | | | 1,4 | 10609933 |
| **ADDRESS** | | | **CITY** | **ZIP** |

| 8893 Three Flags Ave Ste B | Oak Hills | 92344 |
|---|---|---|

## DETAILS

General Program & Facility Information
CERS ID: 10609933
Facility ID: FA0016222
Facility Regulator Key ID: FA0016222
Organization Code: 90574786
Business/Organization Name: RV Supply Center, Inc
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 4
Facility Count for Business: 1
Last Submittal Date (any element): 4/16/2018 4:27:39 PM
Count of Submitted Elements: 20
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: 760-949-1222
Property Owner Phone Number: 760-949-1222
Property Owner Mailing Address: 8893 Three Flags Ave Ste B
Property Owner Mailing City: Oak Hills
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92344
Property Owner Mailing Country: United States

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 4/4/2018
Hazardous Waste Generator (HW) Last Inspection Date: 4/4/2018
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported

Phone Number: 760-949-1222
Fax Number: Not Reported
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: Not Reported
NAICS Code: Not Reported
Mailing Address: 8893 Three Flags Ave Ste B
Mailing Address City: Oak Hills
Mailing Address State Code: CA
Mailing Address Zip Code: 92344
Operator Name: Mark Boesch
Operator Phone Number: 760-949-1222
Owner Name: Mark Boesch
Owner Phone: 760-949-1222
Owner Mailing Address: 8893 Three Flags Ave Ste B
Owner City: Oak Hills
Owner State: CA
Owner Zip Code: 92344
Owner Country: United States
Environmental Contact Name: Mark Boesch
Environmental Contact Phone Number: 760-949-1222
Environmental Contact Mailing Address: 8893 Three Flags Ave Ste B
Environmental Contact Email Address: mark@rvscinc.com
Environmental Contact City: Oak Hills
Environmental Contact State: CA
Environmental Contact Zip: 92344
Environmental Contact Country: United States
Primary Emergency Contact Name: Mark Boesch
Primary Emergency Contact Title: Owner
Primary Emergency Contact Business Phone Number: 760-949-1222
Primary Emergency Contact 24Hr Phone: 760-524-8036
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Nathaniel Mark Boesch
Secondary Emergency Contact Title: Assistant manager
Secondary Emergency Contact Business Phone: 760-949-1222
Secondary Emergency Contact 24Hr Phone: 760-954-2888
Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Mikhail Levinson
Identification Signer Name: Mikhail Levinson
Identification Signer Title: KPA Consultant
Billing Contact Name: Mark Boesch
Billing Contact Phone: 760-949-1222
Billing Contact Email: mark@rvscinc.com
Billing Address: 8893 Three Flags Ave Ste B
Billing City: Oak Hills
Billing State: CA
Billing Zip: 92344

Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000307361
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 8/31/2017 9:39:04 AM
Submittal Action: Accepted
BP Activities Last Updated Date: 8/31/2017 9:38:58 AM
BP Owner/Operator Last Updated Date: 8/31/2017 9:38:58 AM
Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Rudy Valencia, rvalencia@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.36946
Agency Provided Longitude: -117.42963
Horizontal Accuracy: 10
Horizontal Collection Method: Address Matching
Geographic Reference Point: Facility Center/Centroid
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 12/12/2014 2:56:39 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600

Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 4/16/2018 4:27:39 PM
Facility Info Accepted Date: 10/3/2017 12:37:12 PM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 4/16/2018 4:27:39 PM
Inventory Last Accepted Date: 10/3/2017 12:37:16 PM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 4/16/2018 4:27:39 PM
ER Training Last Accepted Date: 8/23/2017 3:26:35 PM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: Not Reported
APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: CAL000307361
RCRA LQG: No
Violation Date: 4/4/2018
Violation Type Number: 1010006
Class: Minor
Scheduled Return to Compliance Date: 5/4/2018
Actual Return to Compliance Date: 4/17/2018
Actual Return to Compliance Qualifier: Documented
Violation Comment: OBSERVATION:  The inventory submitted in CERS on 02/27/2018 did no reflect (1) 55 gal drum of wastse paint.CORRECTIVE ACTION: Submit the updated business plan information into the California Environmental Reporting System (CERS).
Violation Category: Administration/Documentation
Violation Name: Business plan updates
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:A 100 percent or more increase in the quantity of a previously disclosed material.Any handling of a previously undisclosed hazardous materials at or above reportable quantities. A change of business address, business ownership, or business name.  A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Citation(s): HSC 6.95 25508.1(a)-(f)

HMRRP & UST Inspection Information
EPA ID: CAL000307361
RCRA LQG: No
Inspection Date: 4/4/2018
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 1
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 4/17/2018
Days Out of Compliance: 13
Violation Details Available: Yes
Inspection Comments: Not Reported

HMRRP & UST Enforcement Information
: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| RV Supply Center, Inc | 1,4 | 277513 |
| **ADDRESS** | **CITY** | **ZIP** |
| 8893 THREE FLAGS AVE STE B | OAK HILLS | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 277513
Site EI ID: 10609933
Agency Provided Latitude: 34.36946
Agency Provided Longitude: -117.42963

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 4/4/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 4/4/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 4/4/2018
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.
A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Note(s): Returned to compliance on 04/17/2018. OBSERVATION:  The inventory submitted in CERS on 02/27/2018

did no reflect (1) 55 gal drum of wastse paint. CORRECTIVE ACTION: Submit the updated business plan information into the California Environmental Reporting System (CERS).
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 4/4/2018
Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22
Violation Description: Failure to properly manage used oil and/or fuel filters in accordance with the requirements.
Violation Note(s): Returned to compliance on 04/04/2018. OBSERVATION: Observed (1) 55 gal drum of used oil filters with no labeling. This was corrected during the inspection.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 4/4/2018
Citation: 40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Description: Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
Violation Note(s): Returned to compliance on 04/17/2018. OBSERVATION: Waste oil was observed in the secondary containment. CORRECTIVE ACTION: Submit a signed statement indicating that the secondary containment will be kept free of hazardous waste..
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 4/4/2018
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Note(s): Returned to compliance on 04/04/2018. OBSERVATION: Observed (1) 55 gal drum of used oil and (1) 55 gal drum of waste antifreeze with incomplete or illegible hazardous waste label. This was corrected during the inspection.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| | | | | |

| CUPA-CA | Listed | 0.12 miles SW | 3643 ft | 10 |
|---|---|---|---|---|
| **SITE NAME** | | | **MAPS** | **ID** |
| RV Supply Center, Inc | | | 1,4 | FA0016222-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8893 Three Flags Ave Ste B | | | Oak Hills | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0016222
Address2: Not Reported
Owner Information: Mark Boesch
Contact Name: Not Reported
Mailing Address: 8893 Three Flags Ave Ste B, Oak Hills, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0036888
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 5/31/2019

Permit ID: PT0036889
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.12 miles SW | 3643 ft | 10 |
| **SITE NAME** | | | **MAPS** | **ID** |
| WINGFOOT COMMERCIAL TIRE SYSTS | | | 1,4 | 16670 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8893 THREE FLAGS AVE | | | Hesperia | 92344 |

**DETAILS**

Sic Code: 5531
Desc: Auto, Truck & Tire Service
Site Added: 2/2010

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| RV SUPPY CENTER INC | 1,4 | CAL000307361 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8893 THREE FLAGS AVE STE B | OAK HILLS | 92344 |

## DETAILS

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000307361
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: RECREATIONAL VEHICLE DEALERS
Active Site Indicator: H----
Owner Name: RV SUPPLY CENTER INC
Operator Name: MARK BOESCH
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20060526
Acknowledge Flag Date: 20060526
Contact First Name: MARK
Contact Last Name: BOESCH
Contact Street 1: 8893 THREE FLAGS AVE STE B
Contact City: OAK HILLS
Contact State: CA
Contact Zip: 92344
Contact Phone: 760-949-1222
Contact FAX: 000-000-0000
Contact E-mail Address: MARK@RVSCINC.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| | | | | |

| CERS-CA | Listed | 0.19 miles SW | 3645 ft | 11 |
|---|---|---|---|---|
| **SITE NAME** | | | **MAPS** | **ID** |
| DOUBLE EAGLE TRANSPORTATION | | | 1,4 | 10049065 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12135 SCARBROUGH CT | | | HESPERIA | 92345 |

## DETAILS

General Program & Facility Information
CERS ID: 10049065
Facility ID: FA0008746
Facility Regulator Key ID: FA0008746
Organization Code: 90044872
Business/Organization Name: DOUBLE EAGLE TRANSPORTATION
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 3
Facility Count for Business: 1
Last Submittal Date (any element): 12/5/2018 4:02:03 PM
Count of Submitted Elements: 77
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): 3.06459116e+012
Number of Employees: 133
Property Owner Name: Gerald Butcher
Property Owner Phone Number: (760) 956-3770
Property Owner Mailing Address: 12135 Scarbrough Court
Property Owner Mailing City: Hesperia
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92344
Property Owner Mailing Country: United States

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: Not Reported
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 8/22/2018
Hazardous Waste Generator (HW) Last Inspection Date: 8/22/2018
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported

Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: 08/28/2018

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: (760) 956-3770
Fax Number: (760) 956-6362
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 7219
NAICS Code: 484220
Mailing Address: 12135 Scarbrough Court
Mailing Address City: Hesperia
Mailing Address State Code: CA
Mailing Address Zip Code: 92345
Operator Name: Gerald Butcher
Operator Phone Number: (760) 956-3770
Owner Name: Double Eagle Transportation Inc.
Owner Phone: (760) 956-3770
Owner Mailing Address: 12135 Scarbrough Court
Owner City: Hesperia
Owner State: CA
Owner Zip Code: 92345
Owner Country: United States
Environmental Contact Name: Tony McKinney
Environmental Contact Phone Number: (760) 956-3770
Environmental Contact Mailing Address: 12135 Scarbrough Court
Environmental Contact Email Address: safetydirector@doubleeagletrans.com
Environmental Contact City: Hesperia
Environmental Contact State: CA
Environmental Contact Zip: 92344
Environmental Contact Country: United States
Primary Emergency Contact Name: Tony McKinney
Primary Emergency Contact Title: Safety Director
Primary Emergency Contact Business Phone Number: (760) 956-3770
Primary Emergency Contact 24Hr Phone: (760) 265-0433
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Jerry Wheeler
Secondary Emergency Contact Title: Operations Manager
Secondary Emergency Contact Business Phone: (760) 956-3770
Secondary Emergency Contact 24Hr Phone: (760) 964-2721
Secondary Emergency Contact Pager Number: (760) 956-3770
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: Jerry Wheeler
Identification Signer Name: Jerry Wheeler

Identification Signer Title: Safety Director
Billing Contact Name: Gerald Butcher
Billing Contact Phone: (760) 956-3770
Billing Contact Email: jerry2Xeagle@AOL.com
Billing Address: 12135 Scarbrough Court
Billing City: Hesperia
Billing State: CA
Billing Zip: 92345
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000225630
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): Y
Own or Operator APSTs? (Y/N): N
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): N
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 7/31/2018 12:08:14 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 7/31/2018 12:01:42 PM
BP Owner/Operator Last Updated Date: 7/31/2018 12:01:42 PM
Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Nancy Schlotthauer, nschlotthauer@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: No changes
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.41259
Agency Provided Longitude: -117.398056
Horizontal Accuracy: 100

Horizontal Collection Method: Interpolation
Geographic Reference Point: Facility Boundary
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 7/1/2010 7:55:00 PM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 12/5/2018 4:02:03 PM
Facility Info Accepted Date: 9/24/2018 1:50:54 PM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 12/5/2018 4:02:03 PM
Inventory Last Accepted Date: 4/2/2018 12:46:24 PM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 10/24/2018 2:13:58 PM
ER Training Last Accepted Date: 4/2/2018 12:46:19 PM
UST Regulator Code: 3600
UST Reporting Requirement: Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: 11/01/2018
UST Last Accepted Date: 09/24/2018
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable
RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Not Applicable
APSA Next Due Date: Not Reported

APSA Last Submitted Date: Not Reported
APSA Last Accepted Date: Not Reported
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
BOE Number: 44039735
Type of Action: Confirmed/Updated Information
UST Facility Type: Motor Vehicle Fueling
Permit Holder Notification Information: Facility Owner
Total Number of USTs: 1
Indian or Trust Land: No
Supervisor of Division, Section, or Office: Not Reported
Tank Owner Name: Double Eagle Transportation
Tank Owner Phone: 760-956-3770
Tank Owner Mailing Address: 12135 Scarbrough Court
Tank Owner City: Hesperia
Tank Owner State: CA
Tank Owner ZIP Code: 92344
Tank Owner Country: United States
Tank Owner Type: Non-Government
Tank Operator Name: Double Eagle Transportation
Tank Operator Phone: 760-956-3770
Tank Operator Mailing Address: 12135 Scarbrough Court
Tank Operator City: Hesperia
Tank Operator State: CA
Tank Operator ZIP Code: 92344
Tank Operator Country: United States
Self-Insured?: No
Guarantee?: No
Insurance?: No
Surety Bond?: No
Letter of Credit?: No
Exemption?: No
State Fund and CFO letter?: Yes
State Fund and CD?: No
Local Government Mechanism?: No
Other?: No
Other Description: Not Reported
Date Submitted to CERS: 7/31/2018 12:08:14 PM
Date Accepted by Regulator: 9/24/2018 1:51:09 PM
Regulator Comment: Thank you for the submittal. This submittal has been verified as complete. Please note it is your responsibility to review and certify the information submitted in CERS annually. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Amanda Nesbit, ICC 8750403-UI, anesbit@sbcfire.org or (909) 386-8419.)
Regulator Agent Name: SCHLOTTHAUER, NANCY

Regulator Name: San Bernardino County Fire Department
Regulator Type: CUPA

Tank & Monitoring Plan Information
Tank ID #: 20K1
Type of Action: Confirmed/Updated Information
Tank Manufacturer: owens corning
Tank Configuration: A Stand-alone Tank
Tank Capacity (In Gallons): 20000
Date UST System Installed: 05-01-1999
Date UST Permanently Closed: Not Reported
Date Existing UST Discovered: Not Reported
Number of Compartments in the Unit: 1
Additional Description: Not Reported
Tank Use: Motor Vehicle Fueling
Specify Other Tank Use: Not Reported
Tank Contents: Diesel
Specify Other Petroleum: Not Reported
Specify Other Non-Petroleum: Not Reported
Type of Tank: Double Wall
Tank Primary Containment Construction: Fiberglass
Tank Construction - Other Primary Containment Construction: Not Reported
Tank Construction - Tank Secondary Containment Construction: Fiberglass
Tank Construction - Other Secondary Containment Construction: Not Reported
Audible/Visual Alarms: No
Ball Float: No
Fill Tube Shut-Off Valve: Yes
Exempt: No
Piping Construction: Double-walled
Piping System Type: Pressure
Primary Containment Construction: Fiberglass
Other Primary Containment Construction: Not Reported
Secondary Containment Construction: Fiberglass
Other Secondary Containment Construction: Not Reported
Piping/Turbine Containment Sump: Single-walled
Vent Piping Construction - Primary Containment Construction: Fiberglass
Vent Piping Const - Other Primary Containment Construction: Not Reported
Vent Piping Construction - Secondary Containment Construction: None
Vent Piping Const - Other Secondary Containment Construction: Not Reported
Vent Piping Transition Sumps: None
VR Piping Const - Primary Containment Construction: None
VR Piping Const - Other Primary Containment Construction: Not Reported
VR Piping Const - Secondary Containment Construction: None
VR Piping Const - Other Secondary Containment Construction: Not Reported
Riser/Fill Piping Const - Primary Containment Const: Steel
Riser/Fill Piping Const - Other Primary Containment Const: Not Reported
Riser/Fill Piping Const - Secondary Containment Const: Fiberglass
Riser/Fill Piping Const - Other Secondary Containment Const: Not Reported
Spill Bucket Installed: Yes

Striker Plate / Bottom Protector Installed: Yes
Containment Sump: Yes
Construction Type: Single-walled
Construction Material: Steel
Other Construction Material: Not Reported
Sacrificial Anode: No
Impressed Current: No
Isolation: Yes
Monitoring Equipment Serviced: Annually
Other Frequency of Monitoring Equipment Service: Not Reported
Site Plot Plan Submitted: Site Plan Previously Submitted
Continuous Electronic Tank Monitoring: Yes
Tank Secondary Containment System: Dry
Electronic Monitor Panel Manufacturer: Veeder Root
Electronic Monitor Panel Model #: TLS-300C
Tank Monitoring - Leak Sensor Manufacturer: Veeder Root
Tank Monitoring - Leak Sensor Model #: 409
Automatic Tank Gauging: No
ATG Panel Manufacturer: Not Reported
ATG Model #: Not Reported
In-Tank Probe Manufacturer: Not Reported
In-tank Probe Model #: Not Reported
Tank Leak Test Frequency: Not Reported
Other Leak Test Frequency: Not Reported
Programmed Tank Tests: Not Reported
Other Programmed Tests: Not Reported
Monthly Statistical Inventory Reconciliation: No
Weekly Manual Tank Gauge: No
Tank Gauging Test Period: Not Reported
Tank Integrity Testing: No
Tank Integrity Testing Frequency: Not Reported
Other Tank Integrity Testing Frequency: Not Reported
Other Monitoring: No
Specify Other Monitoring: Not Reported
Continuous Monitoring of Piping Secondary Containment: Yes
Piping Secondary Containment: Dry
Panel Manufacturer: Veeder Root
Panel Model #: TLS-300C
Piping Secondary Containment - Leak Sensor Manufacturer: Veeder Root
Piping Secondary Containment - Leak Sensor Model #: 208
Leak Alarm Triggers Automatic Pump Shutdown: Yes
Failure/Disconnect Triggers Pump Shutdown: Yes
Mechanical Line Leak Detector Performs 3 GPH Leak Test: Yes
MLLD Manufacturer: Vapor Less
MLLD Model #: LD2000
Electronic Line Leak Detector Performs 3 GPH Leak Test: No
ELLD Manufacturer: Not Reported
ELLD Model #: Not Reported
ELLD Programmed In-Line Testing: 0.2 GPH
ELLD Triggers Automatic Pump Shutdown: Not Reported

ELLD Failure/Disconnect Triggers Automatic Shutdown: Not Reported
Pipeline Integrity Testing: No
Pipeline Integrity Testing Frequency: Not Reported
Other Pipeline Integrity Testing Frequency: Not Reported
Visual Pipeline Monitoring: No
Visual Pipeline Monitoring Frequency: Not Reported
Suction Piping Meets Exemption Criteria: No
No Regulated Piping Is Connected To The Tank System: No
Other Pipeline Monitoring: No
Other Pipeline Monitoring Description: Not Reported
UDC Monitoring: Float and Chain Assembly
Other UDC Monitoring: Not Reported
UDC Panel Manufacturer: N/A
UDC Panel Model #: N/A
UDC Leak Sensor Manufacturer: Bravo
UDC Leak Sensor Model #: N/A
Detection of Leak into UDC Triggers Audible and Visual Alarms: No
UDC Leak Alarm Triggers Automatic Pump Shutdown: No
Fail/Discon UDC Monitor System Triggers Automatic Pump Shutdown: No
UDC Monitoring Stops Flow of Product at Dispenser: Yes
UDC Construction: Single-walled
UDC Secondary Containment Monitoring: Not Reported
Leak Within Sec Cnt of UDC Causes Audible & Visual Alarms: Not Reported
ELD Testing: No
Secondary Containment Testing: Yes
Spill Bucket Testing: Yes
Alarm Logs: Yes
Visual Inspection Records: Yes
Tank Integrity Testing Results: No
SIR Testing Results: No
Tank Gauging Results: No
ATG Testing Results: No
Corrosion Protection Logs: No
Equipment Maintenance and Calibration Records: Yes
Personnel w/ UST Monitor Responsibility Familiar w/ Training Doc: Yes
UST Monitoring Plan: Not Reported
Operating Manuals: Not Reported
CA UST Regulations: Not Reported
CA UST Law: Not Reported
SWRCB Handbook for Tank Owners - Manual and SIR: Not Reported
SWRCB Publication: Understanding Automatic Tank Gauging Systems: Not Reported
Other Training Documents: Not Reported
Other Training Documents Description: Not Reported
Designated Operator Training: Yes
Comments and Additional Information: fill sup is monitored by -208 sensor
Name of First Person Having Responsibility: Bob Derrick
Title of First Person Having Responsibility: Dispatch Manager
Name of Second Person Having Responsibility: Jerry Wheeler
Title of Second Person Having Responsibility: Safety Director
Signature Representation: Facility Owner/Operator

Signature Date: Not Reported
Applicant Name: Gerald Butcher
Applicant Title: Owner
Date Submitted to CERS: 7/31/2018 12:08:14 PM
Date Accepted by Regulator: 9/24/2018 1:51:09 PM
Regulator Agent Name: SCHLOTTHAUER, NANCY
Regulator Name: San Bernardino County Fire Department
Regulator Type: CUPA

HMRRP & UST Violation Information
EPA ID: CAL000225630
RCRA LQG: No
Violation Date: 8/22/2018
Violation Type Number: 1010004
Class: Minor
Scheduled Return to Compliance Date: 9/21/2018
Actual Return to Compliance Date: Not Reported
Actual Return to Compliance Qualifier: Not Reported
Violation Comment: OBSERVATION: The facility hazardous material inventory lacks the listing of waste coolant and drained used oil filters, and also has inaccurate quantity amounts for "DEF", oil/absorbent and spent fuel filter waste, and gear oil. CORRECTIVE ACTION: Submit an accurate and complete hazardous materials inventory into the California Environmental Reporting System (CERS).
Violation Category: Administration/Documentation
Violation Name: Hazardous materials inventory
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.
Violation Citation(s): HSC 6.95 25505(a)(1), 25506, 25508(a)(1)

Violation Date: 8/22/2018
Violation Type Number: 1010005
Class: Minor
Scheduled Return to Compliance Date: 9/21/2018
Actual Return to Compliance Date: Not Reported
Actual Return to Compliance Qualifier: Not Reported
Violation Comment: OBSERVATION: The facility map lacks the listing of storm and sewer drains. CORRECTIVE ACTION: Submit an accurate and complete site map into the California Environmental Reporting System (CERS).
Violation Category: Administration/Documentation
Violation Name: Site map
Violation Description: Failure to complete and electronically submit a site map with all required content.
Violation Citation(s): HSC 6.95 25505(a)(2), 25508(a)(1)

HMRRP & UST Inspection Information
EPA ID: CAL000225630
RCRA LQG: No
Inspection Date: 8/22/2018
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0

Number of Minor Violations: 2
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported
Days Out of Compliance: 118
Violation Details Available: Yes
Inspection Comments: Not Reported

Inspection Date: 4/23/2015
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported
Days Out of Compliance: 1335
Violation Details Available: No
Inspection Comments: INSPECTION - BP

Inspection Date: 9/2/2014
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported
Days Out of Compliance: 1568
Violation Details Available: No
Inspection Comments: UST FIELD INSPECTION AND CERS CONSULT WITH OPERATORS

Inspection Date: 9/5/2013
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 0
Number of Minor Violations: 0
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: Not Reported
Days Out of Compliance: 1930
Violation Details Available: No
Inspection Comments: UST HANDLER INSPECTION

HMRRP & UST Enforcement Information
: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-UST-CA | Listed | 0.19 miles SW | 3645 ft | **11** |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | FA0008746-SBD |
| **ADDRESS** | **CITY** | **ZIP** |
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino Division of Environmental Health Services
Facility ID: FA0008746
Address2: Not Reported
Owner Info: Double Eagle Transportation Inc.
Contact Name: GERALD BUTCHER
Mailing Address: 12135 Scarbrough Court, Hesperia, CA 92345
Mailing Address2: Not Reported
Permit ID: PT0016928
Program Element Code: 4104
Permit Description: REGULAR UST ANNUAL INSPECTION (PER TANK)
Status: ACTIVE
To: 8/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.19 miles SW | 3645 ft | **11** |
| **SITE NAME** | | | **MAPS** | **ID** |
| DOUBLE EAGLE TRANSPORTATION | | | 1,4 | 391724 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12135 SCARBROUGH CT | | | HESPERIA | 92345 |

## DETAILS

Site Regulated Program Information
Site ID: 391724
Site EI ID: 10049065
Agency Provided Latitude: 34.41259
Agency Provided Longitude: -117.39805

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Program Description: Underground Storage Tank

Evaluation Information
Evaluation Date: 8/28/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/22/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 8/22/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 8/29/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ANNUAL UST INSPECTION AND CERS REVIEW
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/29/2017
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): SB 989 TESTING
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/30/2016

Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): DOUBLE EAGLE HESPERIA
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 9/1/2015
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): DOUBLE EAGLE- UST INSPECTION &  MONITORING CERTIFICATION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 4/23/2015
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTION - BP
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 4/23/2015
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTION - HW
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 1/28/2015
Violations Found? (Y/N): Yes
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): FOLLOW UP INSPECTION FOR VIOLATIONS CITED ON ANNUAL MONITORING CERTIFICATION 9/2/14 .
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 9/2/2014
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): UST FIELD INSPECTION AND CERS CONSULT WITH OPERATORS

Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 9/2/2014
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): UST FIELD INSPECTION-TRIENNIAL SECONDARY CONTAINMENT TESTING WITH ABEL VERGARA. FAILURES FOUND DURING TESTING. VIOLATIONS ATTACHED TO ANNUAL INSPECTION (C16) DAR
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 9/2/2014
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): UST FIELD INSPECTION-ANNUAL MONITORING SYSTEM CERTIFICATION (SINGLE TANK) W/ABEL VERGARA
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 9/5/2013
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): UST MONIORING CERTIFICATION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 9/5/2013
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): UST HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 8/22/2018
Citation: 22 CCR 15 66265.16 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.16
Violation Description: Failure to provide employees with hazardous waste training program of class room instructions or on-the-job training within the first six months after the date of their employment or assignment to a facility, or to a new position at a facility and annually thereafter. Training records on current personnel shall be kept until closure of the facility and for former employees the record shall be kept for at least three years from the date the employee last worked at the facility. The records

shall include the following: the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job; a written job description for each position, duties of facility personnel assigned to each position, and a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position.

Violation Note(s): OBSERVATION: Documented training of personnel was not available at the time of inspection. CORRECTIVE ACTION: Locate training documentation or conduct training with applicable personnel and document it. Submit the signed Certificate of Compliance to show proof of compliance regarding this violation.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/22/2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.

Violation Note(s): OBSERVATION: The facility map lacks the listing of storm and sewer drains. CORRECTIVE ACTION: Submit an accurate and complete site map into the California Environmental Reporting System (CERS).
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 8/22/2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Note(s): OBSERVATION: The facility hazardous material inventory lacks the listing of waste coolant and drained used oil filters, and also has inaccurate quantity amounts for "DEF", oil/absorbent and spent fuel filter waste, and gear oil. CORRECTIVE ACTION: Submit an accurate and complete hazardous materials inventory into the California Environmental Reporting System (CERS).
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 8/22/2018
Citation: 22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description: Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.

Violation Note(s): OBSERVATION: A written hazardous waste tank assessment has not been obtained for the used oil aboveground storage tank system prior to placing system into service. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the used oil tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/22/2018
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Note(s): Returned to compliance on 08/22/2018. OBSERVATION: Two 55-gallon containers of hazardous waste spent paper filters located in the outside storage area near the used oil "ast" were observed without the required hazardous waste label. CORRECTIVE ACTION: Submit the signed Certificate of Compliance to the CUPA showing that the container listed above has been properly labeled. This violation was corrected during the inspection. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/29/2017
Citation: 23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Description: Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.

Violation Note(s): Returned to compliance on 08/29/2018. OBSERVED FLOAT AND CHAIN ASSEMBLY AT DISPENSER #1 DID NOT FUNCTION PROPERLY WHEN TESTED. DID NOT ACTIVATE SHEAR VALVE WHEN TESTED. COMPLIANCE REQUIREMENT: REPAIR AND SCHEDULE WITNESSED RETEST OF FLOAT AND CHAIN ASSEMBLY AT UDC #1 WITHIN 7 (SEVEN) DAYS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 8/30/2016
Citation: HSC 6.7 Multiple - California Health and Safety Code, Chapter 6.7, Section(s) Multiple
Violation Description: UST Program - Administration/Documentation - General - Must include violation description, proper statute and regulation citation in the "comment" section.
Violation Note(s): Returned to compliance on 09/02/2016. Failure to have a written monitoring program with monitoring procedures and response plan (CHSC 25286(a)) OBSERVATIONS: THE TANK INFORMATION PAGE SHOW THAT THE TANK IS A FLUID CONTAINMENT TANK, WHEN IT IS AN OWEN CORNINGS TANK. THIS WAS ALSO CONFIRMED BY THE TECHNICIAN. THE UST RESPONSE PLAN NEEDS TO BE UPDATED WITH THE NEW RESPONSIBLE PERSONS AND SECTION V NEEDS TO BE COMPLETED. COMPLIANCE REQUIREMENT: UPDATE THE TANK INFORMATION PAGE AND RESPONSE PLAN IN CERS. INFORM THE INSPECTOR ONCE COMPLETED.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 1/28/2015
Citation: HSC 6.7 25292.1(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25292.1(a)
Violation Description: Failure to operate the UST system to prevent spills and/or overfills.
Violation Note(s): Returned to compliance on 04/23/2015. SHEAR VALVE #1 AT MAIN DISPENSER FAILED TO CEASE FUEL DISPENSING WHEN TESTED FOR FUNCTIONALITY. COMPLIANCE REQUIREMENT: IMMEDIATELY CEASE OPERATION OF MAIN DISPENSER #1. REPAIR SHEAR VALVE AND ENSURE PROPER FUNCTIONALITY OF EQUIPMENT PRIOR TO OPERATION. CONTACT THIS DIVISION PRIOR TO REPAIRS AND TO DETERMINE IF A PERMIT WILL BE REQUIRED FOR REPAIR. SUBMIT COPIES OF REPAIR RECORDS. SUBMIT SIGNED CERTIFICATE OF COMPLIANCE WITH COPIES OF WORK ORDERS AND REPAIRS WITHIN 7 (SEVEN) DAYS. FINAL INSPECTION ON

APPROVED UST MODIFICATION. JMAY
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 1/28/2015
Citation: HSC 6.7 29291(b) - California Health and Safety Code, Chapter 6.7, Section(s) 29291(b)
Violation Description: Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance stored in the primary containment into the secondary containment.
Violation Note(s): Returned to compliance on 04/23/2015. SHEAR VALVE #1 AT MAIN DISPENSER FAILED TO CEASE FUEL DISPENSING WHEN TESTED FOR FUNCTIONALITY. COMPLIANCE REQUIREMENT: IMMEDIATELY CEASE OPERATION OF MAIN DISPENSER #1. REPAIR SHEAR VALVE AND ENSURE PROPER FUNCTIONALITY OF EQUIPMENT PRIOR TO OPERATION. CONTACT THIS DIVISION PRIOR TO REPAIRS AND TO DETERMINE IF A PERMIT WILL BE REQUIRED FOR REPAIR. SUBMIT COPIES OF REPAIR RECORDS. SUBMIT SIGNED CERTIFICATE OF COMPLIANCE WITH COPIES OF WORK ORDERS AND REPAIRS WITHIN 7 (SEVEN) DAYS. FINAL INSPECTION ON APPROVED UST MODIFICATION. JMAY
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 1/28/2015
Citation: HSC 6.7 25299 - California Health and Safety Code, Chapter 6.7, Section(s) 25299
Violation Description: Failure to comply with one or more of the operating permit conditions.
Violation Note(s): Returned to compliance on 04/23/2015. SHEAR VALVE #1 AT MAIN DISPENSER FAILED TO CEASE FUEL DISPENSING WHEN TESTED FOR FUNCTIONALITY. COMPLIANCE REQUIREMENT: IMMEDIATELY CEASE OPERATION OF MAIN DISPENSER #1. REPAIR SHEAR VALVE AND ENSURE PROPER FUNCTIONALITY OF EQUIPMENT PRIOR TO OPERATION. CONTACT THIS DIVISION PRIOR TO REPAIRS AND TO DETERMINE IF A PERMIT WILL BE REQUIRED FOR REPAIR. SUBMIT COPIES OF REPAIR RECORDS. SUBMIT SIGNED CERTIFICATE OF COMPLIANCE WITH COPIES OF WORK ORDERS AND REPAIRS WITHIN 7 (SEVEN) DAYS. FINAL INSPECTION ON APPROVED UST MODIFICATION. JMAY
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 9/2/2014
Citation: HSC 6.7 25292.1(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25292.1(a)
Violation Description: Failure to operate the UST system to prevent spills and/or overfills.
Violation Note(s): Returned to compliance on 04/23/2015. THE SYSTEM CURRENTLY HAS SEVERAL SECONDARY CONTAINMENT FAILURES AND DOES NOT MEET STANDARDS TO PREVENT THE THREAT OF RELEASE TO THE ENVIRONMENT. REQUIREMENT: SUBMIT PLANS FOR REPAIR WITHIN 30 DAYS (SEE DESCRIPTION FOR VIOLATION #329). FINAL INSPECTION ON APPROVED UST MODIFICATION. JMAY
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 9/2/2014
Citation: HSC 6.7 29291(b) - California Health and Safety Code, Chapter 6.7, Section(s) 29291(b)
Violation Description: Failure of the UST system to be designed and constructed with a monitoring system capable of detecting the entry of the hazardous substance stored in the primary containment into the secondary containment.
Violation Note(s): Returned to compliance on 01/21/2015. THE SYSTEM IS NOT CURRENTLY OPERATED TO MEET

DESIGN AND CONSTRUCTION REQUIREMENTS DUE TO MULTIPLE SECONDARY CONTAINMENT FAILURES. REQUIREMENT: IMMEDIATELY DETERMINE THE SOURCE OF FAILURE(S) AND CONTACT THIS DEPARTMENT WITH RESULTS UPON COMPLETION. IF NECESSARY, SUBMIT PLANS AND OBTAIN A UST MODIFICATION PERMIT FOR REPAIRS. FOR PERMITTABLE REPAIRS, COMPLETE PLANS SHALL BE SUBMITTED FOR REVIEW WITHIN 30 DAYS.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Violation Date: 9/2/2014
Citation: HSC 6.7 25290.1(h), 25290.2(g), 25291(f), 25292(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(h), 25290.2(g), 25291(f), 25292(e)
Violation Description: Failure to install line leak detector.

Violation Note(s): Returned to compliance on 09/02/2014. THE MECHANICAL LEAK DETECTOR FAILED TO RECOGNIZE THE SIMULATED LEAK WHEN TESTED.  REQUIREMENT: THE LEAK DETECTOR WAS REPLACED WHILE ONSITE WITH LIKE-FOR-LIKE EQUIPMENT. THE OLD VMI WAS REPLACED WITH A NEW VMI LD2000 AND RETESTED BY THE TECHNICIAN. THE NEW MLLD PASSED. VIOLATION CORRECTED.
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 8/30/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Enforcement Action Date: 1/28/2015
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Enforcement Action Date: 9/2/2014
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Chemical Information
: Not Reported

:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | FA0008746-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0008746
Address2: Not Reported
Owner Information: Double Eagle Transportation Inc.
Contact Name: GERALD BUTCHER
Mailing Address: 12135 Scarbrough Court, Hesperia, CA 92345
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0016926
Program Element Code: 4454
Permit Description: LARGE QUANTITY GENERATOR
Status: ACTIVE
To: 8/31/2019

Permit ID: PT0016927
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 8/31/2019

Permit ID: PT0016928
Program Element Code: 4104
Permit Description: REGULAR UST ANNUAL INSPECTION (PER TANK)
Status: ACTIVE
To: 8/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| DryCleaners-CA | Listed | 0.19 miles SW | 3645 ft | **11** |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | CAL000225630 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBOROUGH CT | HESPERIA | 923450000 |

## DETAILS

EPA ID: CAL000225630
Create Date: 12/18/2001
Facility Act Ind: y
Inact Date: Not Reported
Facility Street2: Not Reported
County: San Bernardino
Latitude: 0
Longitude: 0
Mailing Name: Not Reported
Facility Mailing Address: 12135 SCARBROUGH CT
Facility Mailing Address 2: Not Reported
Facility Mailing City: OAK HILLS
Facility Mailing State: CA
Facility Mailing Zip Code: 923449200
Region Code: 4
Owner Name: JERRY BUTCHER
Owner Address: 12135 SCARBROUGH CT
Owner Address2: Not Reported
Owner City: OAK HILLS
Owner State: CA
Owner Zip Code: 923449200
Owner Phone Number: 7609563770
Owner Fax Number: 7609566362
Contact Name: TONY MCKINNEY
Contact Address: 12135 SCARBROUGH COURT
Contact Address2: Not Reported
Contact City: HESPERIA
Contact State: CA
Contact Zip Code: 92344
Contact Phone Number: 7609563770
NAICS Code: 81232
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)
SIC Code: 7211
SIC Description: Power Laundries, Family and Commercial
Reason: SIC/NAICS

NAICS Code: 812331
NAICS Description: Linen Supply
SIC Code: 7213
SIC Description: Linen Supply
Reason: SIC/NAICS

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | CAL000225630 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBOROUGH CT | HESPERIA | 92345 |

## DETAILS

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000225630
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: GENERAL FREIGHT TRUCKING
Active Site Indicator: H----
Owner Name: JERRY BUTCHER
Operator Name: TONY MCKINNEY
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20011218
Acknowledge Flag Date: 20011218
Contact First Name: TONY
Contact Last Name: MCKINNEY
Contact Street 1: 12135 SCARBROUGH COURT
Contact City: HESPERIA
Contact State: CA
Contact Zip: 92344
Contact Phone: 760-956-3770
Contact FAX: 760-956-6362
Contact E-mail Address: SAFETYDIRECTOR@DOUBLEEAGLETRANS.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| UST-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | 243095 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

**DETAILS**

More Information on Site? Go to Following Link: http://geotracker.waterboards.ca.gov/search.asp
CERSID: 10049065
Global ID: FA0008746
COUNTY: San Bernardino
Permitting Agency: San Bernardino County Fire Department
Agency Provided Latitude: 34.41259
Agency Provided Longitude: -117.398056
PROJECT TYPE: Not Reported
RB Case Number: Not Reported
LOC Case Number: Not Reported
Case Worker: Not Reported
MTBE DATE: Not Reported
GW CONC (PPB): Not Reported
MATRIX: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| UST-CRSP-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1,4 | 391724 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

**DETAILS**

Site Regulated Program Information
Site ID: 391724
EI ID: 10049065
Agency Provided Address: 12135 SCARBROUGH CT

Agency Provided Latitude: 34.41259

Agency Provided Longitude: -117.39805
Program Description: Underground Storage Tank

Evaluation Information (2017 to present)
Evaluation Date: 11/9/2021
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 11/9/2021
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 8/17/2021
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Annual UST inspection with MC and OPE
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/17/2020
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Annual UST inspection with monitoring certification.
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/21/2019
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): UST INSPECTION & UST MONITORING CERTIFICATION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST

Evaluation Source: CERS

Evaluation Date: 8/21/2019
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): UST OVERFILL INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/28/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/22/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 8/22/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 8/29/2017
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): SB 989 TESTING
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/29/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection

Evaluation Type: Routine done by local agency
Evaluation Note(s): ANNUAL UST INSPECTION AND CERS REVIEW
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Violation Information (2017 to present)
Violation Date: 8/22/2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Note(s): Returned to compliance on 12/05/2018. OBSERVATION: The facility hazardous material inventory lacks the listing of waste coolant and drained used oil filters, and also has inaccurate quantity amounts for "DEF", oil/absorbent and spent fuel filter waste, and gear oil. CORRECTIVE ACTION: Submit an accurate and complete hazardous materials inventory into the California Environmental Reporting System (CERS). Updated Business Plan hazardous material inventory was submitted to the "CERS" database on 12/5/2018. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 8/22/2018
Citation: 22 CCR 15 66265.192(a) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.192(a)
Violation Description: Failure to obtain and maintain a written assessment reviewed and certified by an independent, qualified, professional engineer prior to placing the tank system in service. The written assessment shall state that, the new hazardous waste tank system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system including the foundation, structural support, seams, connections, and pressure controls (if applicable) are suitably designed to meet the regulation.

Violation Note(s): OBSERVATION: A written hazardous waste tank assessment has not been obtained for the used oil aboveground storage tank system prior to placing system into service. CORRECTIVE ACTION: Obtain a written hazardous waste tank system assessment for the used oil tank system in accordance with 22 CCR 15 66265.192 and submit a copy to the CUPA.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/22/2018
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit a site map with all required content.

Violation Note(s): Returned to compliance on 09/06/2018. OBSERVATION: The facility map lacks the listing of storm and sewer drains. CORRECTIVE ACTION: Submit an accurate and complete site map into the California Environmental Reporting System (CERS). Updated Business Plan submitted to the "CERS" database on 9/6/2018. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 8/22/2018

Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Note(s): Returned to compliance on 08/22/2018. OBSERVATION: Two 55-gallon containers of hazardous waste spent paper filters located in the outside storage area near the used oil "ast" were observed without the required hazardous waste label. CORRECTIVE ACTION: Submit the signed Certificate of Compliance to the CUPA showing that the container listed above has been properly labeled. This violation was corrected during the inspection. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/22/2018
Citation: 22 CCR 15 66265.16 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.16
Violation Description: Failure to provide employees with hazardous waste training program of class room instructions or on-the-job training within the first six months after the date of their employment or assignment to a facility, or to a new position at a facility and annually thereafter. Training records on current personnel shall be kept until closure of the facility and for former employees the record shall be kept for at least three years from the date the employee last worked at the facility. The records shall include the following: the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job; a written job description for each position, duties of facility personnel assigned to each position, and a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position.

Violation Note(s): OBSERVATION: Documented training of personnel was not available at the time of inspection. CORRECTIVE ACTION: Locate training documentation or conduct training with applicable personnel and document it. Submit the signed Certificate of Compliance to show proof of compliance regarding this violation.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 8/29/2017
Citation: 23 CCR 16 2712 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712
Violation Description: Failure to comply with any of the applicable requirements of the permit issued for the operation of the UST system.

Violation Note(s): Not Reported
Violation Division: San Bernardino County Fire Department
Violation Program: UST
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 8/30/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Enforcement Action Date: 1/28/2015
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Enforcement Action Date: 9/2/2014
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: UST
Enforcement Action Source: CERS

Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AST-CRSP-CA | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | | | 1,4 | 11970 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE STE C | | | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 11970
EI ID: 10402582
Agency Provided Address: 8853 THREE FLAGS AVE STE C
Agency Provided Latitude: 34.41111

Agency Provided Longitude: -117.39383
Program Description: Aboveground Petroleum Storage

Evaluation Information (2017 to present)
Evaluation Date: 11/4/2021
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection

Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 11/4/2021
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 2/13/2019
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 2/13/2019
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 2/13/2019
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s):
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Violation Information (2017 to present)
Violation Date: 11/4/2021
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Note(s): Returned to compliance on 12/08/2021. OBSERVATION: The facility Hazardous Materials Business Plan was last certified via CERS on 3/2/2020. Your CERS ID number is 10402582. CORRECTIVE ACTION: Review and certify the

Hazardous Materials Business Plan electronically via CERS.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 2/13/2019
Citation: 22 CCR 15 66265.16 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.16
Violation Description: Failure to provide employees with hazardous waste training program of class room instructions or on-the-job training within the first six months after the date of their employment or assignment to a facility, or to a new position at a facility and annually thereafter. Training records on current personnel shall be kept until closure of the facility and for former employees the record shall be kept for at least three years from the date the employee last worked at the facility. The records shall include the following: the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job; a written job description for each position, duties of facility personnel assigned to each position, and a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position.

Violation Note(s): Returned to compliance on 03/13/2019. OBSERVATION: As demonstrated by the number and type of hazardous waste violations observed at the time of inspection, personnel are not adequately trained to perform their duties in a way that ensures the facility's compliance with hazardous waste laws and regulations, and/or employee training records have not been kept or do not contain all required information. CORRECTIVE ACTION: Conduct training with applicable personnel and document it according to the requirements of 22 CCR 15 66265.16(d). Submit the signed Certificate of Compliance to this Agency to show that the listed violation was corrected. Signed C of C proof oc compliance statement received by email on 3/13/2019. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 2/13/2019
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.
Violation Note(s): Returned to compliance on 03/13/2019. OBSERVATION: Two used oil aboveground storage tanks (AST's) and a bulk container of waste coolant at the facility hazardous waste storage area lacked the required hazardous waste labeling; provide hazardous waste labels on the actual "AST's" or containers. CORRECTIVE ACTION: Properly label all hazardous waste containers and or "AST's" and submit the signed Certificate of Compliance to this Agency to show that the listed violation has been corrected. Signed C of C proof oc compliance statement received by email on 3/13/2019. CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 2/13/2019
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Note(s): Returned to compliance on 03/25/2019. OBSERVATION: Failure to accurately complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities; The following listed hazardous materials were not disclosed on the facility Business Plan: 2 - 55-gallon containers of oil/absorbent and paper oil filter waste. CORRECTIVE ACTION: Submit an accurate and complete hazardous materials

inventory via CERS and submit the signed Certificate of Compliance to this Agency to show proof that the listed violation has been corrected.  "BP" update submitted to "CERS" database on 3/25/2019.  CB
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 2/13/2019
Citation: 22 CCR 15 66265.31 - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.31
Violation Description: Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
Violation Note(s): Returned to compliance on 03/13/2019. OBSERVATION: Pooled liquid waste was observed on the floor of the secondary containment structure at the facility hazardous waste storage area.  Note: liquid waste in secondary containment structures should be removed within 24 hours.  CORRECTIVE ACTION: Properly clean up the the liquid waste and lawfully manage and dispose of any hazardous waste, and submit the signed Certificate of Compliance to this Agency to show that the listed violation has been corrected.  Signed C of C proof oc compliance statement received by email on 3/13/2019.  CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 2/13/2019
Citation: 22 CCR 15 66265.195(c) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(c)
Violation Description: Failure to conduct and document inspections of hazardous waste tank systems each operating day and retain records of those inspections at the facility.
Violation Note(s): Returned to compliance on 03/13/2019. OBSERVATION: Daily inspections of the used oil "AST's" have not been conducted and documented.  CORRECTIVE ACTION: Conduct daily tank inspections on the used oil "AST's" and submit the signed Certificate of Compliance to this Agency to show that the listed violation has been corrected.  Signed C of C proof oc compliance statement received by email on 3/13/2019.  CB
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: APSA
Enforcement Action Source: CERS

Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1,4 | 10402582 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 Three Flags Ave Ste C | Hesperia | 92344 |

## DETAILS

General Program & Facility Information
CERS ID: 10402582
Facility ID: FA0014891
Facility Regulator Key ID: FA0014891
Organization Code: 90364402
Business/Organization Name: BEST LUBE TRUCK SERVICE & REPAIRS LLC
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 1
Last Submittal Date (any element): 3/1/2018 7:42:32 PM
Count of Submitted Elements: 15
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 5
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported

Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported

Inspection Information
Aboveground Petroleum Storage Act (APSA) Last Inspection Date: 1/25/2016
California Accidental Release Prevention (CalARP) Last Inspection: Not Reported
Conditionally Authorized (CA) Last Inspection Date: Not Reported
Conditionally Exempt (CE) Last Inspection Date: Not Reported
Household Hazardous Waste Collection (HHW) Last Inspection Date: Not Reported
Hazardous Materials Release Response Plan (HMRRP) Last Inspection: 1/25/2016
Hazardous Waste Generator (HW) Last Inspection Date: 1/25/2016
RCRA Large Quantity Generator (HWLQG) Last Inspection Date: Not Reported
Hazardous Waste Recycler (HWRecycler) Last Inspection Date: Not Reported
Permit By Rule (PBR) Last Inspection: Not Reported
Underground Storage Tank (UST) Last Inspection Date: Not Reported

Owner/Operator Information
Beginning Date: Not Reported
Ending Date: Not Reported
Phone Number: (760) 244-8033
Fax Number: (760) 244-8599
Supplemental Location: Not Reported
County: San Bernardino
Dun & Bradstreet D-U-N-S Number: Not Reported
SIC Code: 7538
NAICS Code: Not Reported
Mailing Address: 8853 Three Flags Ave Ste C
Mailing Address City: Hesperia
Mailing Address State Code: CA
Mailing Address Zip Code: 92344
Operator Name: Angelica Jimenez
Operator Phone Number: (661)400-4753
Owner Name: Francisco Jimenez
Owner Phone: (661) 400-4587
Owner Mailing Address: 37123 Calle Real St
Owner City: Palmdale
Owner State: CA
Owner Zip Code: 93550
Owner Country: United States
Environmental Contact Name: Francisco Jimenez
Environmental Contact Phone Number: (661) 400-4587
Environmental Contact Mailing Address: 37123 Calle Real St
Environmental Contact Email Address: Bestlubeservice@hotmail.com
Environmental Contact City: Palmdale
Environmental Contact State: CA

Environmental Contact Zip: 93550
Environmental Contact Country: United States
Primary Emergency Contact Name: Francisco Jimenez
Primary Emergency Contact Title: Owner
Primary Emergency Contact Business Phone Number: (760) 244-8033
Primary Emergency Contact 24Hr Phone: (661) 400-4587
Primary Emergency Contact Pager Number: Not Reported
Secondary Emergency Contact Name: Angelica Jimenez
Secondary Emergency Contact Title: Secretary/Owner's Daughter
Secondary Emergency Contact Business Phone: Not Reported
Secondary Emergency Contact 24Hr Phone: (661) 400-4753
Secondary Emergency Contact Pager Number: Not Reported
Additional Local Collected Info: Not Reported
Identification Signed Date: Not Reported
Document Preparer Name: ANGELICA JIMENEZ
Identification Signer Name: ANGELICA JIMENEZ
Identification Signer Title: Secretary
Billing Contact Name: Francisco Jimenez
Billing Contact Phone: (760) 244-8033
Billing Contact Email: Bestlubeservice@hotmail.com
Billing Address: 8853 Three Flags Ave Ste C
Billing City: Hesperia
Billing State: CA
Billing Zip: 92344
Billing Country: United States
Business Owner/Operator Regulator Key: Not Reported

Business Activity Information
EPA ID: CAL000372624
Hazardous Materials On Site? (Y/N): Y
CAL ARP Regulated Substances? (Y/N): N
Own or Operator USTs? (Y/N): N
Own or Operator APSTs? (Y/N): Y
Hazardous Waste Generator? (Y/N): Y
Recycles Materials? (Y/N): N
On-site HW Treatment? (Y/N): N
Financial Assurance? (Y/N): N
Remote Waste Consolidation Site? (Y/N): N
Hazardous Waste Tank Closure? (Y/N): N
RCRA Large Quantity Generator? (Y/N): Y
Household Hazardous Waste (HHW) Collection? (Y/N): N
Business Activity Comment(s): Not Reported

Submittal Information
Submitted Date/Time: 2/28/2017 7:44:21 PM
Submittal Action: Accepted
BP Activities Last Updated Date: 2/24/2017 1:00:46 PM
BP Owner/Operator Last Updated Date: 2/24/2017 1:00:46 PM

Submittal Action Comment 1: ACCEPTED AS COMPLETE PENDING FIELD VERIFICATION: Thank you for the submittal. While this submittal is being accepted as complete, the data has not been field verified and may require correction in the future. Please note, it is your responsibility to review and certify the information submitted in CERS annually. You must also update the information within 30 days of a change of owner, business address, business name, emergency contact information, inventory and/or other site conditions that could impact emergency response activity. If you have questions about using CERS, please contact the San Bernardino County Fire CERS Help Desk at (909) 386-8432. (Reviewed by Rudy Valencia, rvalencia@sbcfire.org or (909) 386-8401)
Submittal Action Comment 2: Not Reported
Facility Info Next Due Date: Not Reported
Biz Activities Regulator Key: Not Reported

Supplemental Geographic Information
Agency Provided Latitude: 34.41111
Agency Provided Longitude: -117.39383
Horizontal Accuracy: 300
Horizontal Collection Method: Address Matching
Geographic Reference Point: Facility Center/Centroid
Horizontal Reference Datum: WGS84 (World Geodetic System of 1984)
Data Collection Date: 5/18/2015 1:23:02 AM

Submittal Element Regulator Information
CUPA Regulator Code: 3600
Facility Info Reporting Requirement: Applicable
Facility Info Next Due Date: Not Reported
Facility Info Last Submitted Date: 3/1/2018 7:42:32 PM
Facility Info Accepted Date: 6/23/2017 1:05:05 PM
Inventory Regulator Code: 3600
Inventory Reporting Requirement: Applicable
Inventory Next Due Date: Not Reported
Inventory Last Submitted Date: 3/1/2018 7:42:32 PM
Inventory Last Accepted Date: 6/23/2017 1:05:47 PM
ER Training Regulator Code: 3600
ER Training Reporting Requirement: Applicable
ER Training Next Due Date: Not Reported
ER Training Last Submitted Date: 3/1/2018 7:42:32 PM
ER Training Last Accepted Date: 6/23/2017 1:05:44 PM
UST Regulator Code: 3600
UST Reporting Requirement: Not Applicable
UST Next Due Date: Not Reported
UST Last Submitted Date: Not Reported
UST Last Accepted Date: Not Reported
HW Treat Regulator Code: 3600
HW Treat Reporting Requirement: Not Applicable
HW Treat Next Due Date: Not Reported
HW Treat Last Submitted Date: Not Reported
HW Treat Last Accepted Date: Not Reported
RMR Regulator Code: 3600
RMR Reporting Requirement: Not Applicable

RMR Next Due Date: Not Reported
RMR Last Submitted Date: Not Reported
RMR Last Accepted Date: Not Reported
Consolidation Regulator Code: 3600
Consolidation Reporting Requirement: Not Applicable
Consolidation Next Due Date: Not Reported
Consolidation Last Submitted Date: Not Reported
Consolidation Last Accepted Date: Not Reported
Tank Closure Regulator Code: 3600
Tank Closure Reporting Requirement: Not Applicable
Tank Closure Next Due Date: Not Reported
Tank Closure Last Submitted Date: Not Reported
Tank Closure Last Accepted Date: Not Reported
APSA Regulator Code: 3600
APSA Reporting Requirement: Applicable
APSA Next Due Date: Not Reported
APSA Last Submitted Date: 3/1/2018 7:42:32 PM
APSA Last Accepted Date: 6/23/2017 1:05:48 PM
CalARP Regulator Code: 3600
CalARP Reporting Requirement: Not Applicable
CalARP Next Due Date: Not Reported
CalARP Last Submitted Date: Not Reported
CalARP Last Accepted Date: Not Reported

UST Facility and Program Information
: Not Reported
Tank & Monitoring Plan Information
: Not Reported
HMRRP & UST Violation Information
EPA ID: CAL000372624
RCRA LQG: Yes
Violation Date: 1/25/2016
Violation Type Number: 1010002
Class: Minor
Scheduled Return to Compliance Date: 2/24/2016
Actual Return to Compliance Date: 3/10/2016
Actual Return to Compliance Qualifier: Documented
Violation Comment: Not Reported
Violation Category: Administration/Documentation
Violation Name: Hazardous Materials Business Plan Submittal
Violation Description: Failure to complete and/or electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.
Violation Citation(s): 19 CCR 6.95 25505; HSC 6.95 25508(a)(1), 25508(d)

Violation Date: 1/25/2016
Violation Type Number: 1010008
Class: Class 2
Scheduled Return to Compliance Date: 2/24/2016
Actual Return to Compliance Date: 3/10/2016

Actual Return to Compliance Qualifier: Documented
Violation Comment: Not Reported
Violation Category: Administration/Documentation
Violation Name: Annual Review / Certification
Violation Description: Failure to annually review and electronically certify that the business plan is complete, accurate, and up-to-date.
Violation Citation(s): HSC 6.95 25508(c), 25508.2

HMRRP & UST Inspection Information
EPA ID: CAL000372624
RCRA LQG: Yes
Inspection Date: 1/25/2016
Inspection Type: Routine
Number of Class I Violations: 0
Number of Class II Violations: 1
Number of Minor Violations: 1
Significant Operational Compliance: With both Release Detection and Release Prevention
Date Returned to Compliance: 3/10/2016
Days Out of Compliance: 45
Violation Details Available: Yes
Inspection Comments: INSPECTION OF BEST LUBE TRUCK SERVICE & REPAIRS LLC IN HESPERIA.

HMRRP & UST Enforcement Information
Type of Enforcement Action: Notice of Violation (NOV) Only
Date of Enforcement Action: 1/25/2016
Type of Formal Enforcement Action: Not Reported
Date a Referred Case Settled or Dropped: Not Reported
Docket Number: Not Reported
Final Fine or Penalty Assessed: Not Reported
Supplemental Environmental Projects Value: Not Reported
Count of Linked Class I Violations: 0
Count of Linked Class II Violations: 1
Count of Linked Minor Violations: 1
Red Tag Issued: No
Red Tag Number: Not Reported
Violations Causing Red Tag: Not Reported
Date Red Tag Affixed: Not Reported
Date Red Tag Removed: Not Reported
Enforcement Comments: Not Reported

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-AST-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1,4 | FA0014891-SBD |
| **ADDRESS** | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE UNIT C | Hesperia | 92344 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino Division of Environmental Health Services
Facility ID: FA0014891
Address2: Not Reported
Owner Information: Francisco Jimenez
Contact Name: FRANCISCO JIMENEZ
Mailing Address: 8853 Three Flags Ave Ste C, Hesperia, CA 92344
Mailing Address2: Not Reported
Permit ID: PT0031853
Program Element Code: 4031
Permit Description: APSA 1,320-10,000 GAL  FAC CAPACITY
Status: ACTIVE
To: 2/28/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.21 miles S | 3649 ft | **12** |
| **SITE NAME** | | | **MAPS** | **ID** |
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | | | 1,4 | 11970 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE STE C | | | HESPERIA | 92344 |

## DETAILS

Site Regulated Program Information
Site ID: 11970
Site EI ID: 10402582
Agency Provided Latitude: 34.41111
Agency Provided Longitude: -117.39383

Program Description: Aboveground Petroleum Storage

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Program Description: RCRA LQ HW Generator

Evaluation Information
Evaluation Date: 1/25/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTION OF BEST LUBE TRUCK SERVICE & REPAIRS LLC IN HESPERIA.
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 1/25/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTION OF BEST LUBE TRUCK SERVICE & REPAIRS LLC IN HESPERIA.
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 1/25/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTION OF BEST LUBE TRUCK SERVICE & REPAIRS LLC IN HESPERIA.
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Violation Information
Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Violation Note(s): Returned to compliance on 02/24/2016. Failure to keep hazardous waste containers closed when not in active use (CCR 66265.173(a))
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Violation Note(s): Returned to compliance on 02/24/2016. Failure to label hazardous waste containers (CCR 66262.34(f)(3))

Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Training - General

Violation Note(s): Returned to compliance on 03/10/2016. Failure to train facility personnel in hazardous waste management procedures (CCR 66265.16)
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Violation Note(s): Returned to compliance on 02/24/2016. Failure to complete hazardous waste labels (CCR 66262.34(f)(3))
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Violation Note(s): Returned to compliance on 02/24/2016. Failure to operate and maintain facility to prevent a fire, spill or release  (CCR 66265.31)
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.95 25508(d) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(d)
Violation Description: Failure to complete and/or electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.

Violation Note(s): Returned to compliance on 03/10/2016.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan .
Violation Note(s): Returned to compliance on 03/10/2016.
Violation Division: San Bernardino County Fire Department
Violation Program: APSA
Violation Source: CERS

Violation Date: 1/25/2016
Citation: 22 CCR 16 66266.130 - California Code of Regulations, Title 22, Chapter 16, Section(s) 66266.130
Violation Description: Failure to properly handle, manage, label, and recycle used oil and fuel filters.
Violation Note(s): Returned to compliance on 02/24/2016.
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Violation Note(s): Returned to compliance on 02/24/2016. Failure to note accumulation start date on labels (CCR 66262.34(f)(2))
Violation Division: San Bernardino County Fire Department
Violation Program: HW
Violation Source: CERS

Violation Date: 1/25/2016
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Description: Failure to annually review and electronically certify that the business plan is complete, accurate, and up-to-date.

Violation Note(s): Returned to compliance on 03/10/2016.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
Violation Source: CERS

Enforcement Information
Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HW
Enforcement Action Source: CERS

Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: HMRRP
Enforcement Action Source: CERS

Enforcement Action Date: 1/25/2016
Enforcement Action Type: Notice of Violation (Unified Program)
Enforcement Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection

Enforcement Action Note(s): Not Reported
Enforcement Action Division: San Bernardino County Fire Department
Enforcement Action Program: APSA
Enforcement Action Source: CERS

Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1,4 | FA0014891-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 THREE FLAGS AVE UNIT C | Hesperia | 92344 |

## DETAILS

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0014891
Address2: Not Reported
Owner Information: Francisco Jimenez
Contact Name: FRANCISCO JIMENEZ
Mailing Address: 8853 Three Flags Ave Ste C, Hesperia, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0025928
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 2/28/2020

Permit ID: PT0025929
Program Element Code: 4454
Permit Description: LARGE QUANTITY GENERATOR
Status: ACTIVE
To: 2/28/2020

Permit ID: PT0031853

Program Element Code: 4031
Permit Description: APSA 1,320-10,000 GAL  FAC CAPACITY
Status: ACTIVE
To: 2/28/2020

Permit ID: PT0037301
Program Element Code: 4300
Permit Description: RCRA LQG GENERAL ACTIVITY(NB)
Status: FEE EXEMPT
To: 2/28/2018

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| CAJON TIRE SVC | | | 1,4 | 17338 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE B | | | Hesperia | 92344 |
| **DETAILS** | | | | |

Sic Code: 5531
Desc: Auto, Truck & Tire Service
Site Added: 2/2010

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| WEST COAST TIRES & TRUCK RPR | | | 1,4 | 23876 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE B | | | Hesperia | 92344 |
| **DETAILS** | | | | |

Sic Code: 5531
Desc: Auto, Truck & Tire Service
Site Added: 2/2010

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | | | 1,4 | CAL000372624 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE UNIT C | | | HESPERIA | 92345 |

**DETAILS**

Additional details may be found online using the following link:
https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000372624
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: GENERAL AUTOMOTIVE REPAIR
Active Site Indicator: H----
Owner Name: FRANCISCO A JIMENEZ
Operator Name: ANGELICA N JIMENEZ
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20120313
Acknowledge Flag Date: 20120313
Contact First Name: ANGELICA
Contact Last Name: N JIMENEZ
Contact Street 1: 37123 CALLE REAL ST
Contact City: PALMDALE
Contact State: CA
Contact Zip: 93550
Contact Phone: 661-400-4753
Contact FAX: 760-244-8599
Contact E-mail Address: BESTLUBESERVICE@HOTMAIL.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| School-Other-CA | NO ACTION REQUIRED | 0.48 miles SE | 3598 ft | 13 |
| **SITE NAME** | | | **MAPS** | **ID** |
| | | | | |

| NEW MESQUITE TRAILS WEST ELEMENTARY SCHOOL | 1,4 | 70000125 |
|---|---|---|
| **ADDRESS** | **CITY** | **ZIP** |
| 12850 MUSCATEL STREET | HESPERIA | 92345 |

## DETAILS

URL: http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=70000125
Envirostor ID: 70000125
Agency Provided Address: 12850 MUSCATEL STREET
County: SAN BERNARDINO
Site Type: SCHOOL INVESTIGATION
Site Type Detailed: SCHOOL
Acres: 7
Assessor's Parcel Number: 3064-631-07
National Priorities List: NO
Lead Agency: SMBRP
Project Manager: Not Reported
Supervisor: SHAHIR HADDAD
Division Branch: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Site Code: 404669
Assembly: 33
Senate: 21
Congressional District: 8
Special Program: Not Reported
Status: NO ACTION REQUIRED
Status Date: 11/16/2005
Past Uses: NONE
Restricted Use: NO
Funding: SCHOOL DISTRICT
Regulatory Agencies Involved: SMBRP
Potential Contamination of Concern: NONE SPECIFIED,31000
Confirmed Contamination of Concern: NONE SPECIFIED
Potential Media Affected: NMA
Site Management Requirements: NONE SPECIFIED
Agency Provided Latitude: 34.4124988
Agency Provided Longitude: -117.3818021
Description: The details below (if any) are all either Future, Scheduled, and/or Completed Activities on the site
Area Name: PROJECT WIDE
Sub Area Name: Not Reported
Document Type: COST RECOVERY CLOSEOUT MEMO
Due Date: Not Reported
Completed Date: 11/16/2005
Activity Comments: Not Reported

Description: The details below (if any) are all either Future, Scheduled, and/or Completed Activities on the site
Area Name: PROJECT WIDE
Sub Area Name: Not Reported
Document Type: PHASE 1

Due Date: Not Reported
Completed Date: 11/16/2005
Activity Comments: PHASE I REVIEW COMPLETE.

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| LUST-Closed-CA | COMPLETED - CASE CLOSED | 0.5 miles SW | 3678 ft | 14 |

| SITE NAME | MAPS | ID |
|---|---|---|
| PILOT #381 | 1,4 | T0607144072 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8701 HIGHWAY 395 | HESPERIA | 92345 |

## DETAILS

Sites Details
URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607144072
Global ID: T0607144072
Case Type: LUST CLEANUP SITE
Status: COMPLETED - CASE CLOSED
Agency Provided Address: 8701 HIGHWAY 395
Status Date: 3/18/2009
Cleanup Fund Case: NO
Lead Agency: SAN BERNARDINO COUNTY
Case Worker: JC
Local Agency: SAN BERNARDINO COUNTY
Resolution Case Number: 6B3601044T
Location Case Number: T06071
File Location: Not Reported
Potential Contaminants of Concern: DIESEL
Potential Media Affected: UNDER INVESTIGATION
Site History: Not Reported
Begin Date: 6/11/2007
How Discovered: OTHER MEANS
How Discovered Description: LEAK IN PRODUCT LINES OBSERVED WHEN PRESSURIZED FOR TESTING. THERE WAS NO LEAKING OBSERVED DURING NORMAL OPERATIONS. A LEAK IN AND IN-LINE VALVE IN A SUMP WAS OBSERVED. PILOT HAS ORDERED PARTS FOR REPAIR.
Stop Method: OTHER MEANS
Stop Method Description: Not Reported
Agency Provided Latitude: 34.4099215
Agency Provided Longitude: -117.3991492

Regulatory Activities Details

Action Date: 6/11/2007
Action Type: Other
Action: Leak Began

Action Date: 6/11/2007
Action Type: Other
Action: Leak Discovery

Action Date: 6/21/2007
Action Type: Other
Action: Leak Reported

Action Date: 11/15/2007
Action Type: ENFORCEMENT
Action: Closure/No Further Action Letter

Action Date: 11/15/2007
Action Type: ENFORCEMENT
Action: Staff Letter

Status History Details
Status Date: 3/18/2009
Status: COMPLETED - CASE CLOSED

Status Date: 2/5/2009
Status: OPEN - INACTIVE

Status Date: 11/15/2007
Status: COMPLETED - CASE CLOSED

Status Date: 6/11/2007
Status: OPEN - CASE BEGIN DATE

Status Date: 6/11/2007
Status: OPEN - VERIFICATION MONITORING

Contact Details
Note: Contacts were last updated in 2021
Contact Type: REGIONAL BOARD CASEWORKER
Contact Name: TAMMY LUNDQUIST
Organization Name: LAHONTAN RWQCB (REGION 6T)
Contact Address: 2501 LAKE TAHOE BLVD.
Contact City: SOUTH LAKE TAHOE
Contact Email: TAMMY.LUNDQUIST@WATERBOARDS.CA.GOV
Contact Phone Number: 5305425400

Methyl tertiary-butyl ether/Region Details

: Not Reported

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

# RecCheck Area Report Results

The Standard for ASTM/AAI Radius Searches

(One Mile Environmental Records Search, Exceeds ASTM 1527/1528 and EPA All Appropriate Inquiry)

REPORT RESULTS



## Site Location:

Apns 3064-591-12, -13, 17, -18 And 3064-631-01
Hesperia, CA 92344
(N 34-24-54, W 117-23-32) NAD83

## Client:

UltraSystems Environmental Inc.



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# EXECUTIVE SUMMARY

## *INFORMATION ON THE REQUESTED LOCATION*

| | |
|---|---|
| **Site Address:** | Apns 3064-591-12, -13, 17, -18 And 3064-631-01<br>Hesperia, CA 92344 |
| **Client Project Name/Number:** | Cargo Solutions-Truck Warehouse<br>7187 |
| **Coordinates:** | N 34-24-54, W 117-23-32 (NAD 83)<br>34.4149538155935, -117.392229114202 |
| **Date of Report** | September 15, 2022 |
| **ERS Project Number:** | 2104769356 |
| **Subject Site Listed on the following lists:** | Not Listed |
| **Subject Site Listed as Map ID#:** | N/A |
| **USGS 7.5 Minute Quad Map:** | Baldy Mesa (Date Unavailable) |
| **Subject Site Located within a Potential Area of Concern:** | No |
| **Township, Section and Range:** | Township: 04N Range: 05W Section: 22<br>Baseline: San Bernardino |
| **Site Elevation:<br>(feet above or below (-) mean sea level)** | Approximately 3618 ft near the center of the area. |
| **Flood Zone:<br>(Digital Flood Insurance Rate Maps - DFIRMs)<br>Only available digital data is provided** | Panel: 06071C6475H, Effective Date: 8/28/2008<br>Zone X - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. |
| **Fire Insurance Map Coverage:** | There may be coverage of your site. |
| **Radon Information:** | EPA Radon Zone: 2 (Predicted avg for county: 2 to 4 pCi/L)<br>For zip code 92344:<br>Number of tests per zip code: 1<br>Number of tests where radon is > 4 pCi/L: 0<br>Percentage of test where radon is > 4 pCi/L: 0.00%<br>Other Information:<br>Not Reported |
| **Search Radius Expansion Size:<br>(In Miles)** | 0 |


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| | |
|---|---|
| **Soil Type:**<br>**(USDA Soil Survey Geographic Database) (SSURGO)** | Map Unit Name: HESPERIA LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES<br>Map Unit Type: Consociation<br>Drainage Class - Dominant Condition: Well drained<br>General Information: Coarse-loamy, mixed, nonacid, thermic Xeric Torriorthents<br>Top 3 Map Unit Components are below (if available):<br>Component Name: Wrightwood, Cajon, Hesperia<br>Component Percentage: 5%, 5%, 85%<br>Hydric: No, No, No |
| **Zip Codes Searched for "Un-Mappable" Sites:** | Not Researched |
| **Occurrence Count:** | 62 |


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# SUMMARY OF OCCURRENCES

| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 1<br>Maps:<br>1, 4 | 338278<br>B & D Industrial Park | Popular St & Three Flags Ave<br>Hesperia | Hist-CA | No Longer Listed | 0.01 NW | N/A |
| 2<br>Maps:<br>1, 4 | 10400761<br>High Desert Truck and Trailer | 8995 Three Flags Ave<br>Hesperia | CERS-CA | Listed | 0.03 S | N/A |
| 2<br>Maps:<br>1, 4 | 169689<br>High Desert Truck and Trailer | 8995 THREE FLAGS AVE<br>HESPERIA | CRSP-CA | Listed | 0.03 S | N/A |
| 2<br>Maps:<br>1, 4 | 110065650352<br>VVG FACILITY #7 | 8995 THREE FLAGS AVE<br>HESPERIA | FRS-US | Listed | 0.03 S | N/A |
| 2<br>Maps:<br>1, 4 | 278713<br>Tanks Ent LLC | 8995 Three Flags Avenue<br>Hesperia | Hist-CA | No Longer Listed | 0.03 S | N/A |
| 2<br>Maps:<br>1, 4 | CAL000320679<br>HIGH DESERT TRUCK & TRAILER | 8995 THREE FLAGS AVE STE B&C<br>VICTORVILLE | HWIS-CA | Listed | 0.03 S | N/A |
| 2<br>Maps:<br>1, 4 | CAL000320679<br>HIGH DESERT TRUCK & TRAILER | 8995 THREE FLAGS AVE STE B&C<br>VICTORVILLE | RCRA-NON-US | Listed | 0.03 S | N/A |
| 3<br>Maps:<br>1, 4 | FA0011408-SBD<br>THE LITZENBERGER COMPANY | 12221 POPLAR ST 14<br>HESPERIA | CUPA-CA | Listed | 0.04 W | N/A |
| 4<br>Maps:<br>1, 4 | 10762693<br>Superior Pool Products LLC #548A | 12221 Poplar St Bldg E<br>Hesperia | CERS-CA | Listed | 0.06 W | N/A |
| 4<br>Maps:<br>1, 4 | 437884<br>Superior Pool Products LLC #548A | 12221 POPLAR ST BLDG E<br>HESPERIA | CRSP-CA | Listed | 0.06 W | N/A |
| 5<br>Maps:<br>1, 4 | 842-MD<br>Zippy Lube | 8899 Three Flags Avenue<br>Hesperia | AIR-DIST-CA | Listed | 0.06 S | N/A |
| 5<br>Maps:<br>1, 4 | 177957-SC<br>IRONMAN RENEWAL LLC | 8899 THREE FLAGS<br>HESPERIA | AIR-DIST-CA | Listed | 0.06 S | N/A |


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| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 5 Maps: 1, 4 | 172882 ZIPPY LUBE-A-TRUCK | 8899 THREE FLAGS AVE HESPERIA | AST-CRSP-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 10128901 Little Sister's Truck Wash | 8899 Three Flags Ave Hesperia | CERS-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 10049617 ZIPPY LUBE-A-TRUCK | 8899 Three Flags Ave Hesperia | CERS-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | FA0009125-SBD ZIPPY LUBE-A-TRUCK | 8899 THREE FLAGS AVE B Hesperia | County-AST-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 172882 ZIPPY LUBE-A-TRUCK | 8899 THREE FLAGS AVE HESPERIA | CRSP-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 130941 Little Sister's Truck Wash | 8899 THREE FLAGS AVE HESPERIA | CRSP-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | FA0010378-SBD Little Sister's Truck Wash | 8899 THREE FLAGS AVE Hesperia | CUPA-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | FA0009125-SBD ZIPPY LUBE-A-TRUCK | 8899 THREE FLAGS AVE B Hesperia | CUPA-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 110066395494 LITTLE SISTER'S TRUCK WASH | 8899 THREE FLAGS AVE HESPERIA | FRS-US | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 110033211245 ZIPPY LUBE-A-TRUCK, INC. | 8899B THREE FLAGS AVENUE HESPERIA | FRS-US | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | 110066206484 ZIPPY LUBE-A-TRUCK | 8899 THREE FLAGS AVE HESPERIA | FRS-US | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | FA0010378-SBD LITTLE SISTERS TRUCK WASH | 8899 THREE FLAGS AVE HESPERIA | Hist-CA | Name Changed | 0.06 S | N/A |
| 5 Maps: 1, 4 | CAL000344771 IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | 8899 THREE FLAGS AVE OAK HILLS | Hist-CA | No Longer Listed | 0.06 S | N/A |


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| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 5 Maps: 1, 4 | 54FDFFFA-CAL000344771 IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | 8899 THREE FLAGS AVE OAK HILLS | Hist-CA | No Longer Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | CAL000416670 ANELLE MANAGEMENT SERVICES INC DBA FLEET CREW | 8899 THREE FLAGS AVE HESPERIA | Hist-CA | No Longer Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | CAL000416670 FLEETCREW | 8899 THREE FLAGS AVE HESPERIA | HWIS-CA | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | CAL000353253 LITTLE SISTERS TRUCK WASH INC | 8899 THREE FLAGS AVE OAK HILLS | RCRA-NON-US | Listed | 0.06 S | N/A |
| 5 Maps: 1, 4 | CAL000416670 ANELLE MANAGEMENT SERVICES INC DBA FLEET | 8899 THREE FLAGS AVE HESPERIA | RCRA-NON-US | Listed | 0.06 S | N/A |
| 6 Maps: 1, 4 | FA0012792-SBD DESERT DYNAMICS OFFROAD | 12221 POPLAR ST BLDG B-10 HESPERIA | CUPA-CA | Listed | 0.06 W | N/A |
| 7 Maps: 1, 4 | 10311793 3M OAK HILLS | 12221 POPLAR ST UNIT D20 OAK HILLS | CERS-CA | Listed | 0.08 W | N/A |
| 7 Maps: 1, 4 | 617 3M OAK HILLS | 12221 POPLAR ST UNIT D20 OAK HILLS | CRSP-CA | Listed | 0.08 W | N/A |
| 7 Maps: 1, 4 | FA0013596-SBD 3M OAK HILLS | 12221 POPLAR ST UNIT D20 OAK HILLS | CUPA-CA | Listed | 0.08 W | N/A |
| 8 Maps: 1, 4 | FA0016142-SBD High Desert Truck and Trailer | 8895 THREE FLAGS AVE Hesperia | CUPA-CA | Listed | 0.11 SW | N/A |
| 9 Maps: 1, 4 | 10312237 DIRECTV | 12269 SCARBROUGH CT HESPERIA | CERS-CA | Listed | 0.11 S | N/A |
| 9 Maps: 1, 4 | FA0008728-SBD CDM CONSTRUCTORS INC. | 12269 SCARBROUGH CT HESPERIA | CUPA-CA | Listed | 0.11 S | N/A |


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| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 9 Maps: 1, 4 | FA0013884-SBD DIRECTV | 12269 SCARBROUGH CT HESPERIA | CUPA-CA | Listed | 0.11 S | N/A |
| 9 Maps: 1, 4 | FA0012098-SBD 3M OAK HILLS REMOTE STORAGE | 12269 SCARBROUGH CT HESPERIA | CUPA-CA | Listed | 0.11 S | N/A |
| 10 Maps: 1, 4 | 10609933 RV Supply Center, Inc | 8893 Three Flags Ave Ste B Oak Hills | CERS-CA | Listed | 0.12 SW | N/A |
| 10 Maps: 1, 4 | 277513 RV Supply Center, Inc | 8893 THREE FLAGS AVE STE B OAK HILLS | CRSP-CA | Listed | 0.12 SW | N/A |
| 10 Maps: 1, 4 | FA0016222-SBD RV Supply Center, Inc | 8893 Three Flags Ave Ste B Oak Hills | CUPA-CA | Listed | 0.12 SW | N/A |
| 10 Maps: 1, 4 | 16670 WINGFOOT COMMERCIAL TIRE SYSTS | 8893 THREE FLAGS AVE Hesperia | Hist-Auto Repair | Listed | 0.12 SW | N/A |
| 10 Maps: 1, 4 | CAL000307361 RV SUPPY CENTER INC | 8893 THREE FLAGS AVE STE B OAK HILLS | RCRA-NON-US | Listed | 0.12 SW | N/A |
| 11 Maps: 1, 4 | 10049065 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | CERS-CA | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | FA0008746-SBD DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | County-UST-CA | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | 391724 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | CRSP-CA | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | FA0008746-SBD DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | CUPA-CA | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | CAL000225630 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBOROUGH CT HESPERIA | DryCleaners-CA | Listed | 0.19 SW | N/A |


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| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 11 Maps: 1, 4 | CAL000225630 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBOROUGH CT HESPERIA | RCRA-NON-US | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | 243095 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | UST-CA | Listed | 0.19 SW | N/A |
| 11 Maps: 1, 4 | 391724 DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT HESPERIA | UST-CRSP-CA | Listed | 0.19 SW | N/A |
| 12 Maps: 1, 4 | 11970 BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 THREE FLAGS AVE STE C HESPERIA | AST-CRSP-CA | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | 10402582 BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 Three Flags Ave Ste C Hesperia | CERS-CA | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | FA0014891-SBD BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 THREE FLAGS AVE UNIT C Hesperia | County-AST-CA | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | 11970 BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 THREE FLAGS AVE STE C HESPERIA | CRSP-CA | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | FA0014891-SBD BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 THREE FLAGS AVE UNIT C Hesperia | CUPA-CA | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | 17338 CAJON TIRE SVC | 8853 THREE FLAGS AVE B Hesperia | Hist-Auto Repair | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | 23876 WEST COAST TIRES & TRUCK RPR | 8853 THREE FLAGS AVE B Hesperia | Hist-Auto Repair | Listed | 0.21 S | N/A |
| 12 Maps: 1, 4 | CAL000372624 BEST LUBE TRUCK SERVICE & REPAIRS LLC | 8853 THREE FLAGS AVE UNIT C HESPERIA | RCRA-NON-US | Listed | 0.21 S | N/A |


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| MAP ID | ID/SITE NAME | ADDRESS | DATABASE | STATUS | DISTANCE (MILES) | ELEV DIFF (FEET) |
|---|---|---|---|---|---|---|
| 13<br>Maps:<br>1, 4 | 70000125<br>NEW MESQUITE TRAILS WEST ELEMENTARY SCHOOL | 12850 MUSCATEL STREET<br>HESPERIA | School-Other-CA | NO ACTION REQUIRED | 0.48 SE | N/A |
| 14<br>Maps:<br>1, 4 | T0607144072<br>PILOT #381 | 8701 HIGHWAY 395<br>HESPERIA | LUST-Closed-CA | COMPLETED - CASE CLOSED | 0.5 SW | N/A |


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# POTENTIAL AREAS OF CONCERN/CONTAMINATION SUMMARY

| DATABASE SEARCHED | SUBJECT SITE WITHIN POTENTIAL AREA OF CONCERN | AREAS FOUND WITHIN 1-MILE RADIUS |
|---|---|---|
| NPL-R9-US | No | 0 |
| MethaneLF-CA | No | 0 |
| LA-LF-CA | No | 0 |
| Military-Bases-US | No | 0 |
| SGV-Deep-Plumes-CA | No | 0 |
| SGV-Shallow-Plumes-Puente-Valley-CA | No | 0 |
| SGV-Shallow-Plumes-CA | No | 0 |

# DATABASE OCCURRENCE SUMMARY

| HIGH RISK* OCCURRENCES IDENTIFIED IN REQUESTED SEARCH RADIUS | | |
|---|---|---|
| DATABASE SEARCHED | DISTANCE SEARCHED (MILES) | HIGH RISK OCCURRENCES FOUND |
| CERCLIS-US | 0.5 | 0 |
| CorAct-Open-CA | 0.5 | 0 |
| County-LUST-Open-CA | 0.5 | 0 |
| County-SLIC-Open-CA | 0.5 | 0 |
| Eval-Hist-Active-CA | 0.5 | 0 |
| Hist-UST-Cleanup-CA | 0.5 | 0 |
| LUST-Open-CA | 0.5 | 0 |
| Military-Active-CA | 1 | 0 |
| NPL-US | 1 | 0 |
| Proposed-NPL-US | 1 | 0 |
| Response-CA | 1 | 0 |
| SAA-Agreements-US | 1 | 0 |
| School-Active-CA | 0.5 | 0 |
| SLIC-Open-CA | 0.5 | 0 |
| State-Response-Active-CA | 1 | 0 |
| Superfund-Active-CA | 1 | 0 |
| Tribal-LUST-Open-Reg10 | 0.5 | 0 |
| Tribal-LUST-Open-Reg4 | 0.5 | 0 |
| Tribal-LUST-Open-Reg9 | 0.5 | 0 |
| Tribal-LUST-Reg7 | 0.5 | 0 |
| VCP-Active-CA | 0.5 | 0 |

* For the purposes of this report, “high risk” occurrences are those that have known contamination and have not received a “case closed” or “no further action” status from the agency that maintains the records.

| ASTM/AAI STANDARD RECORD SOURCES SUMMARY | | | | |
|---|---|---|---|---|
| STANDARD ENVIRONMENTAL RECORD SOURCES | ASTM MIN. SEARCH DIST. / ERS SEARCH DIST. | ERS DATABASE NAME | TOTAL LISTINGS | MAP ID #’S |


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| | (MILES) | | | |
|---|---|---|---|---|
| Federal NPL site list | 1.0 / 1.0 | NPL-US | 0 | None Listed |
| | | Proposed-NPL-US | 0 | None Listed |
| Federal Delisted NPL site list | 0.5 / 1.0 | Delisted-NPL-US | 0 | None Listed |
| Federal CERCLIS list | 0.5 / 0.5 | CERCLIS-US | 0 | None Listed |
| Federal CERCLIS NFRAP site list | 0.5 / 0.5 | CERCLIS-Archived-US | 0 | None Listed |
| Federal RCRA CORRACTS facilities list | 1.0 / 1.0 | RCRA-COR-US | 0 | None Listed |
| Federal RCRA non-CORRACTS TSD facilities list | 0.5 / 0.5 | RCRA-TSDF-US | 0 | None Listed |
| Federal RCRA generators list | Property and adjoining properties / 0.25 | RCRA-CESQG-US | 0 | None Listed |
| | | RCRA-LQG-US | 0 | None Listed |
| | | RCRA-NON-US | 6 | 2, 5, 5, 10, 11, 12 |
| | | RCRA-SQG-US | 0 | None Listed |
| Federal Inst/Eng control registries | Property Only / 0.25 | Controls-RCRA-US | 0 | None Listed |
| | | Controls-US | 0 | None Listed |
| | | Hist-US-EC | 0 | None Listed |
| | | Hist-US-IC | 0 | None Listed |
| | | LIENS-US | 0 | None Listed |
| Federal ERNS list | Property Only / 0.0625 | ERNS-US | 0 | None Listed |
| State and Tribal-Equivalent NPL | 1.0 / 1.0 | Response-CA | 0 | None Listed |
| | | State-Response-Active-CA | 0 | None Listed |
| | | State-Response-NFA-CA | 0 | None Listed |
| | | State-Response-Other-CA | 0 | None Listed |
| State and Tribal-Equivalent CERCLIS | 0.5 / 0.5 | Superfund-Active-CA | 0 | None Listed |
| | | Superfund-NFA-CA | 0 | None Listed |
| | | Superfund-Other-CA | 0 | None Listed |
| State and Tribal landfill and/or solid waste disposal sites | 0.5 / 0.5 | County-SWF-CA | 0 | None Listed |
| | | Debris-US | 0 | None Listed |
| | | Hist-Dumps-US | 0 | None Listed |
| | | Land-Disposal-CA | 0 | None Listed |
| | | SWIS-CA | 0 | None Listed |
| | | SWLF-US | 0 | None Listed |
| | | Tribal-ODI-US | 0 | None Listed |
| State and Tribal Leaking Storage Tank Lists | 0.5 / 0.5 | County-LUST-CA | 0 | None Listed |
| | | County-LUST-Closed-CA | 0 | None Listed |
| | | County-LUST-Open-CA | 0 | None Listed |
| | | Hist-UST-Cleanup-CA | 0 | None Listed |


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| | | | | |
|---|---|---|---|---|
| | | LUST-Closed-CA | 1 | 14 |
| | | LUST-Open-CA | 0 | None Listed |
| | | Tribal-LUST-Closed-Reg4 | 0 | None Listed |
| | | Tribal-LUST-Closed-Reg9 | 0 | None Listed |
| | | Tribal-LUST-Open-Reg10 | 0 | None Listed |
| | | Tribal-LUST-Open-Reg4 | 0 | None Listed |
| | | Tribal-LUST-Open-Reg9 | 0 | None Listed |
| | | Tribal-LUST-Reg1 | 0 | None Listed |
| | | Tribal-LUST-Reg7 | 0 | None Listed |
| State and Tribal Registered Storage Tank Lists | Property and adjoining properties / 0.25 | AST-CA | 0 | None Listed |
| | | AST-CRSP-CA | 2 | 5, 12 |
| | | City-AST-CA | 0 | None Listed |
| | | City-UST-CA | 0 | None Listed |
| | | County-AST-CA | 2 | 5, 12 |
| | | County-UST-CA | 1 | 11 |
| | | FEMA-UST-US | 0 | None Listed |
| | | Hist-UST-CA | 0 | None Listed |
| | | Tribal-UST-Reg1 | 0 | None Listed |
| | | Tribal-UST-Reg10 | 0 | None Listed |
| | | Tribal-UST-Reg4 | 0 | None Listed |
| | | Tribal-UST-Reg7 | 0 | None Listed |
| | | Tribal-UST-Reg9 | 0 | None Listed |
| | | UST-Abandoned-CA | 0 | None Listed |
| | | UST-CA | 1 | 11 |
| | | UST-Closed-CA | 0 | None Listed |
| | | USTComp-CA | 0 | None Listed |
| | | UST-CRSP-CA | 1 | 11 |
| | | UST-Priority-CA | 0 | None Listed |
| | | UST-Proposed-CA | 0 | None Listed |
| State and Tribal Inst/Eng Control Registries | Property Only / 0.5 | Controls-CA | 0 | None Listed |
| | | Deed-CA | 0 | None Listed |
| | | Hist-Controls-CA | 0 | None Listed |
| | | HWMP-Controls-CA | 0 | None Listed |
| | | Liens-CA | 0 | None Listed |
| State and Tribal Voluntary Cleanup Sites | 0.5 / 0.5 | Military-Active-CA | 0 | None Listed |
| | | Military-NFA-CA | 0 | None Listed |
| | | Military-Other-CA | 0 | None Listed |
| | | School-Active-CA | 0 | None Listed |
| | | School-NFA-CA | 0 | None Listed |
| | | School-Other-CA | 1 | 13 |
| | | Tribal-VCP-US | 0 | None Listed |
| | | VCP-Active-CA | 0 | None Listed |


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| | | | | |
|---|---|---|---|---|
| | | VCP-NFA-CA | 0 | None Listed |
| | | VCP-Other-CA | 0 | None Listed |
| State and Tribal Brownfield Sites | 0.5 / 0.5 | BF-MOA-CA | 0 | None Listed |
| | | BF-Tribal-US | 0 | None Listed |

## FEDERAL ASTM/AAI DATABASES

| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| BF-Tribal-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| BF-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CERCLIS-Archived-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CERCLIS-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Controls-RCRA-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Controls-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Debris-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Delisted-NPL-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ERNS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| FEMA-UST-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| FTTS-ENF-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Dumps-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-US-EC | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-US-IC | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| HMIS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| LIENS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| NPL-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| PADS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| PCB-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Proposed-NPL-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| RCRA-CESQG-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| RCRA-COR-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| RCRA-LQG-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| RCRA-NON-US | 0.25 | 0 | 4 | 2 | - | - | 6 |
| RCRA-SQG-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| RCRA-TSDF-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| SAA-Agreements-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| SWLF-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Closed-Reg4 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Closed-Reg9 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Open-Reg10 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Open-Reg4 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Open-Reg9 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Reg1 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-LUST-Reg7 | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-ODI-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Tribal-UST-Reg1 | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Tribal-UST-Reg10 | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Tribal-UST-Reg4 | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Tribal-UST-Reg7 | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Tribal-UST-Reg9 | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Tribal-VCP-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |

## STATE ASTM/AAI DATABASES


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| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| AST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| AST-CRSP-CA | 0.25 | 0 | 1 | 1 | - | - | 2 |
| BF-MOA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| BZ-HazWaste-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CERS-CA | 0.25 | 0 | 7 | 2 | - | - | 9 |
| CHMIRS-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| City-AST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| City-CUPA-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| City-Others-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| City-UST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Controls-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CorAct-Closed-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CorAct-Open-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CorAct-Other-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| CORTESE-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| County-AST-CA | 0.25 | 0 | 1 | 1 | - | - | 2 |
| County-Hist-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| County-LUST-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-LUST-Closed-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-LUST-Open-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-Others-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| County-SLIC-Closed-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| County-SLIC-Open-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-SML-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-SWF-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-UST-CA | 0.25 | 0 | 0 | 1 | - | - | 1 |
| CRSP-CA | 0.25 | 0 | 6 | 2 | - | - | 8 |
| CUPA-CA | 0.25 | 0 | 10 | 2 | - | - | 12 |
| Deed-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| ENF-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| ENF-SMARTS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| ENF-Wastewater-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Eval-Hist-Active-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Eval-Hist-NFA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Eval-Hist-Other-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| HazWaste-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Controls-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-Cort-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| HIST-R4-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| HIST-SLIC-CV-CLOSED-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| HIST-SLIC-CV-OPEN-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-UST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-UST-Cleanup-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-WIP-Active-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-WIP-Backlog-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-WIP-Historical-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| HWIS-CA | 0.0625 | 0 | 2 | - | - | - | 2 |
| HWMP-Controls-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| ICE-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Land-Disposal-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Liens-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| LUST-Closed-CA | 0.5 | 0 | 0 | 0 | 1 | - | 1 |
| LUST-Open-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Manifest2-RI | 0.0625 | 0 | 0 | - | - | - | 0 |
| Military-Active-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Military-NFA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Military-Other-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |


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## STATE ASTM/AAI DATABASES

| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| PR-MOA-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Response-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| School-Active-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| School-NFA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| School-Other-CA | 0.5 | 0 | 0 | 0 | 1 | - | 1 |
| SLIC-Closed-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| SLIC-Open-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| SML-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| State-Response-Active-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| State-Response-NFA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| State-Response-Other-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Superfund-Active-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Superfund-NFA-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Superfund-Other-CA | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| SWIS-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| SWRCY-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| UST-Abandoned-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| UST-CA | 0.25 | 0 | 0 | 1 | - | - | 1 |
| UST-Closed-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| USTComp-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| UST-CRSP-CA | 0.25 | 0 | 0 | 1 | - | - | 1 |
| UST-Priority-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| UST-Proposed-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| VCP-Active-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| VCP-NFA-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| VCP-Other-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |

## SUPPLEMENTAL DATABASES

| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| Air-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| AIR-DIST-CA | 0.25 | 0 | 2 | 0 | - | - | 2 |
| BioFuel-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| CAF-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| CDL-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| CDL-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| CHWF-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Cleaners-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Coal-Ash-Dams-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| County-BI-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Dams-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| DPR-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| DryCleaners-CA | 0.25 | 0 | 0 | 1 | - | - | 1 |
| EGRID-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| EPA-Watch-List-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| FA-HW-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| FA-HW-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| FA-SWF-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| FRS-US | 0.0625 | 0 | 4 | - | - | - | 4 |
| FTTS-INSP-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| FUDS-US | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| FUSRAP-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Haulers-CA | 0.0625 | 0 | 0 | - | - | - | 0 |


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## SUPPLEMENTAL DATABASES

| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
|---|---|---|---|---|---|---|---|
| Hist-AFS2-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-AFS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-AST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-AWS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-CA | 0.0625 | 0 | 6 | - | - | - | 6 |
| Hist-CalFID-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-CALSITES-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-CERCLIS-NFRAP-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-CERCLIS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-City-UST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Deed-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-DTG-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-ERNS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-FIFRA-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-FINDS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-HWS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-LUSTIS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| HIST-MLTS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| HIST-MTBE-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-NPL-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Orange-County-LF-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Historical-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Hist-Prop65-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-RCRIS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-LUST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-Other-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-SLIC-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-Spills-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-SWLF-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Regional-UST-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-SCL-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-SWIS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-ToxicPits-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-TRIS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-USGS-WaterWells-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-USTReg-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-WaterWells-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-WMUDS-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| HWT-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| ICIS-Air-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| ICIS-FEC-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| ICIS-NPDES-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| LA-Waste-Haulers-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| Lead-Smelter-2-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Lead-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| LMOP-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| Mines2-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| Mines-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| Mines-CDMG-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| MINES-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| MLTS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Mortgage-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| MRDS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| MWMP-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |


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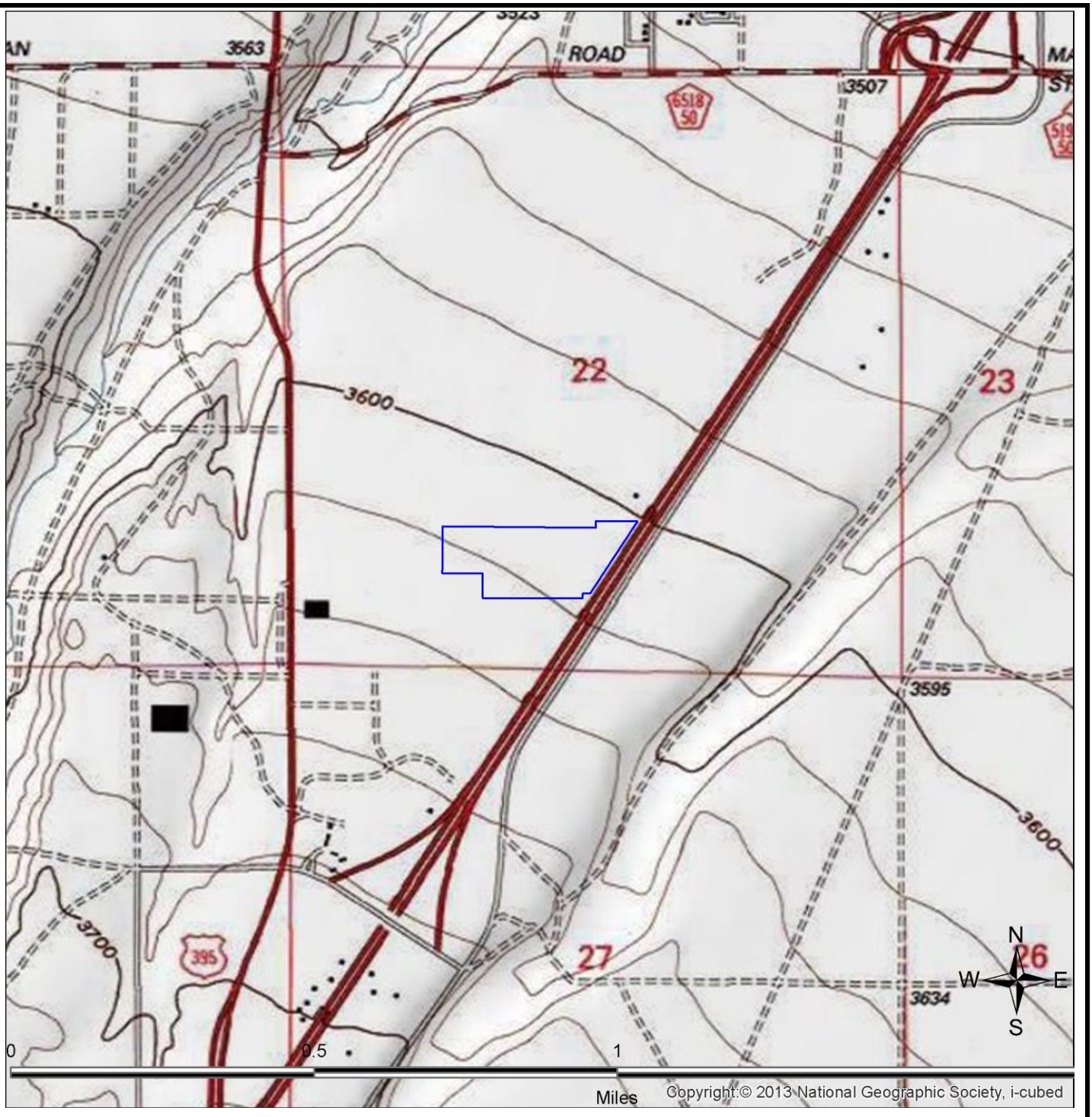
| SUPPLEMENTAL DATABASES | | | | | | | |
|---|---|---|---|---|---|---|---|
| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
| NCI-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| NEI-LF-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| NPDES-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| NPDES-SW-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| OGM-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| OGW-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| OSCF-CA | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| PCS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Perch1-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Perch2-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Project-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| RADINFO-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| RFG-Lab-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| RMP-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| ROD-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| SDWIS-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| SP-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Spills-SSO-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| SSTS-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| TierPer-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |
| TOMS-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| Tribal-Air-US | 0.25 | 0 | 0 | 0 | - | - | 0 |
| TRIS2000-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| TRIS2010-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| TRIS80-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| TRIS90-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| TSCA-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| UIC2-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| UIC-CA | 0.0625 | 0 | 0 | - | - | - | 0 |
| UMTRA-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| USGS-Waterwells-US | 0.0625 | 0 | 0 | - | - | - | 0 |
| Vapor-Intrusions-US | 0.5 | 0 | 0 | 0 | 0 | - | 0 |
| WDR-CA | 0.25 | 0 | 0 | 0 | - | - | 0 |

| PROPRIETARY HISTORIC DATABASES | | | | | | | |
|---|---|---|---|---|---|---|---|
| DATABASE SEARCHED | DISTANCE SEARCHED | SUBJECT SITE | 0.125 MILES | 0.25 MILES | 0.5 MILES | 1.0 MILES | TOTAL |
| Hist-Agriculture | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Auto Dealers | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Auto Repair | 0.25 | 0 | 1 | 2 | - | - | 3 |
| Hist-Chemical Manufacturing | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Chemical-Storage | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Cleaners | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Convenience | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Disposal-Recycle | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Food-Processors | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Gun-Ranges | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Machine Shop | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Manufacturing | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Metal Plating | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Mining | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Mortuaries | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Oil-Gas | 0.0625 | 0 | 0 | - | - | - | 0 |


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| PROPRIETARY HISTORIC DATABASES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DATABASE SEARCHED** | **DISTANCE SEARCHED** | **SUBJECT SITE** | **0.125 MILES** | **0.25 MILES** | **0.5 MILES** | **1.0 MILES** | **TOTAL** |
| Hist-OilGas-Refiners | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Other | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Paint-Stores | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Petroleum | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Post-Offices | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Printers | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Rental | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-RV-Dealers | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Salvage | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Service Stations | 0.25 | 0 | 0 | 0 | - | - | 0 |
| Hist-Steel-Metals | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Textile | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Transportation | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Trucking | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Vehicle-Parts | 0.0625 | 0 | 0 | - | - | - | 0 |
| Hist-Vehicle-Washing | 0.0625 | 0 | 0 | - | - | - | 0 |


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# SITE LOCATION TOPOGRAPHIC MAP

U.S. Geological Survey. Baldy Mesa (Date Unavailable) Quadrangle, 7.5 Minute Series

| | | |
|---|---|---|
| UltraSystems Environmental Inc. | Apns 3064-591-12, -13, 17, -18 And 3064-631-01<br>Hesperia, CA 92344 | FIGURE: 1<br>JOB: 7187<br>DATE: 9/15/2022 |


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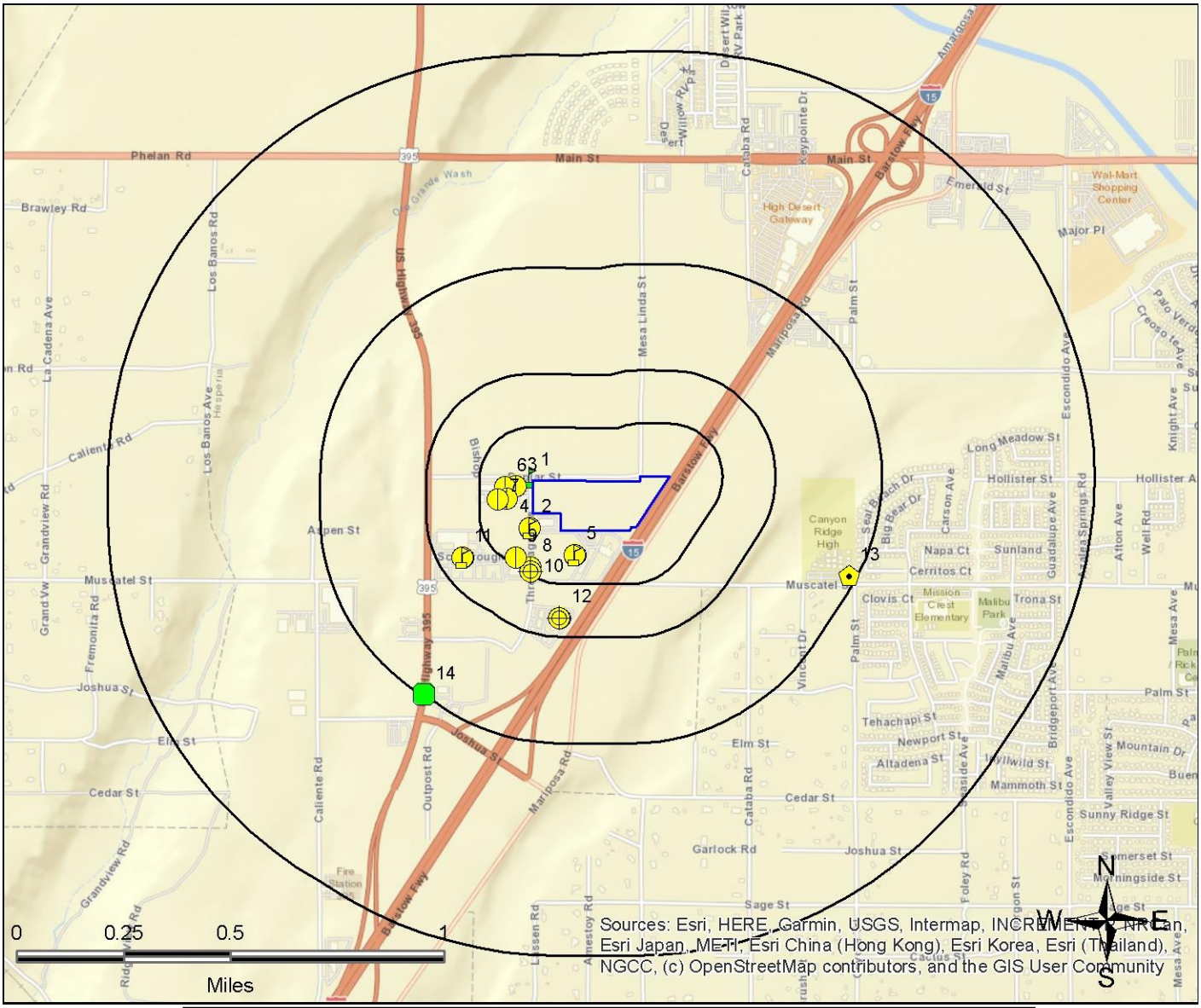



## SITE LOCATION MAP

| | | |
|---|---|---|
| UltraSystems Environmental Inc. | Apns 3064-591-12, -13, 17, -18 And 3064-631-01<br>Hesperia, CA 92344 | FIGURE: 2<br>JOB: 7187<br>DATE: 9/15/2022 |


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# 1-MILE RADIUS STREET MAP W/OCCURRENCES (MAP1)



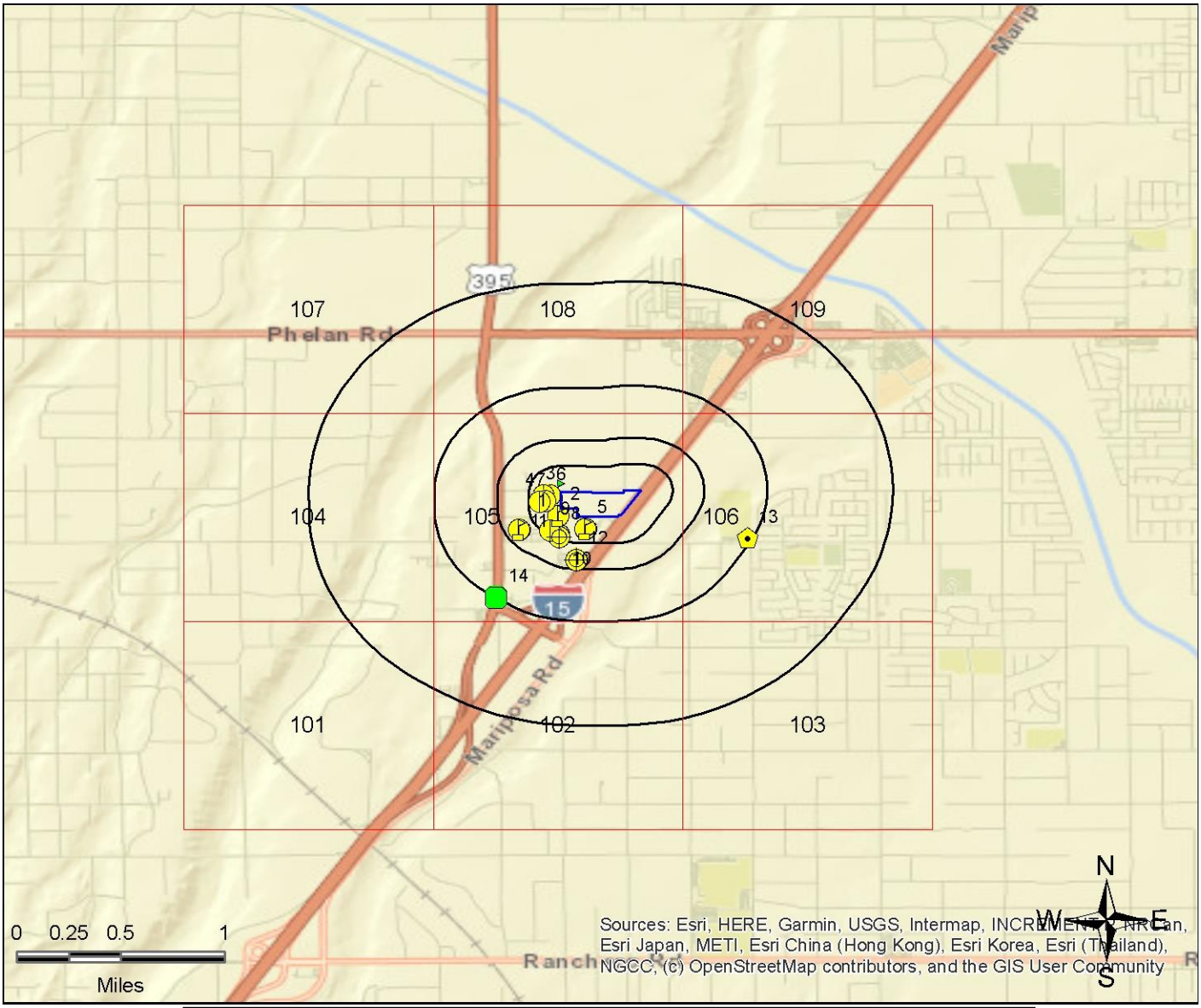

**Legend**

| | | | | |
|---|---|---|---|---|
| Federal NPL | Federal RCRA non-CORRACTS TSD | Federal Emergency Release Reports | State/Tribal UST | ERS Supplemental Govt Sources |
| Federal Delisted NPL | Federal RCRA Generators | Emergency Release Reports | State/Tribal Brownfield | ERS Exclusive Historic Sources |
| Federal CERCLIS | Federal UST | State/Tribal NPL | State/Tribal Inst/Eng Controls | |
| Federal CERCLIS NFRAP | Federal Inst/Eng Controls | State/Tribal CERCLIS Equivalent | State/Tribal Landfill/Solid Waste | |
| Federal LUST | Federal Brownfield | State/Tribal LUST | State/Tribal RCRA Equivalent | |
| Federal RCRA CORRACTS | Federal ERNS | State/Tribal Voluntary Cleanup Sites | State/Tribal ASTM Other | |

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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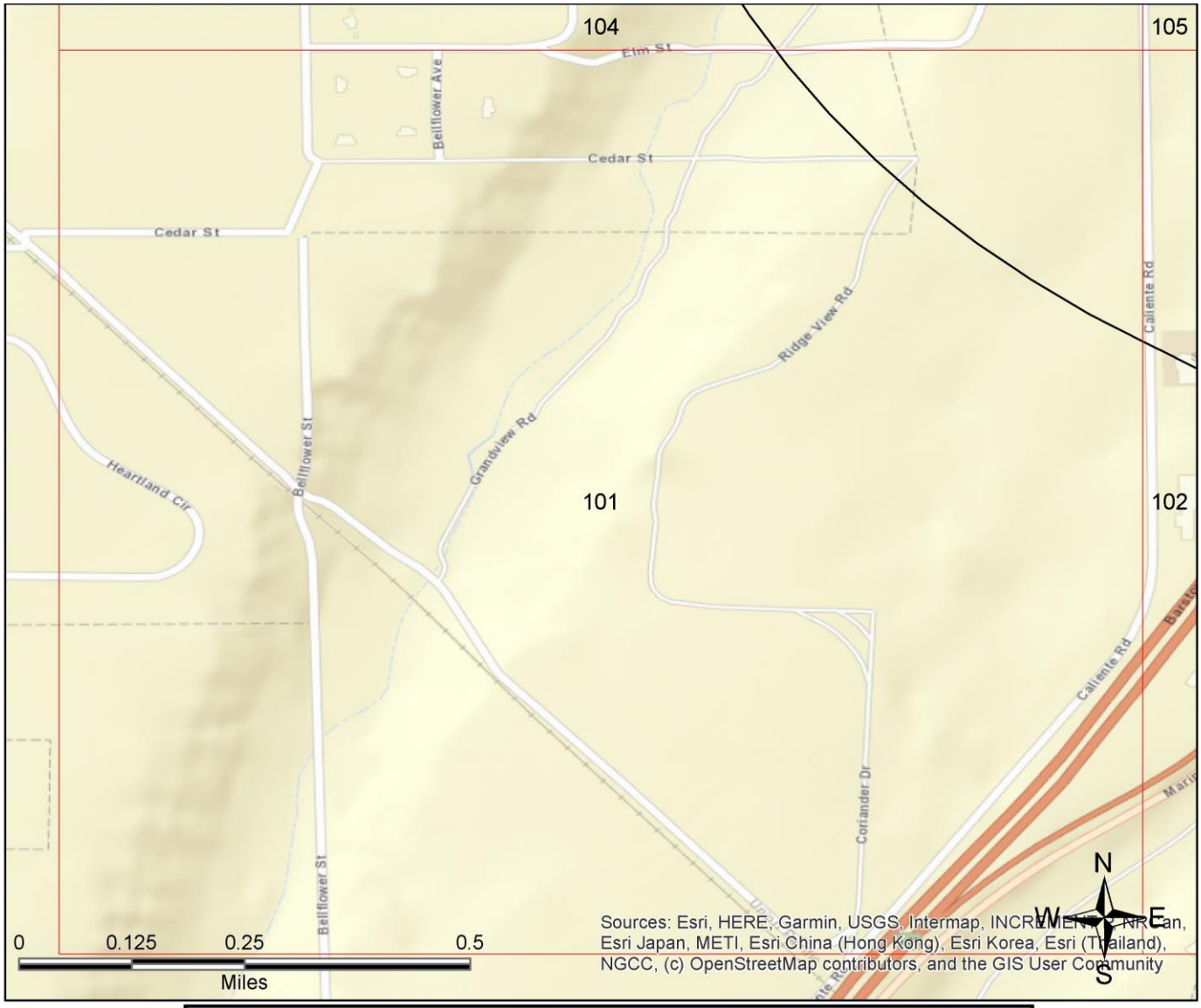
# GRID LAYOUT MAP KEY




All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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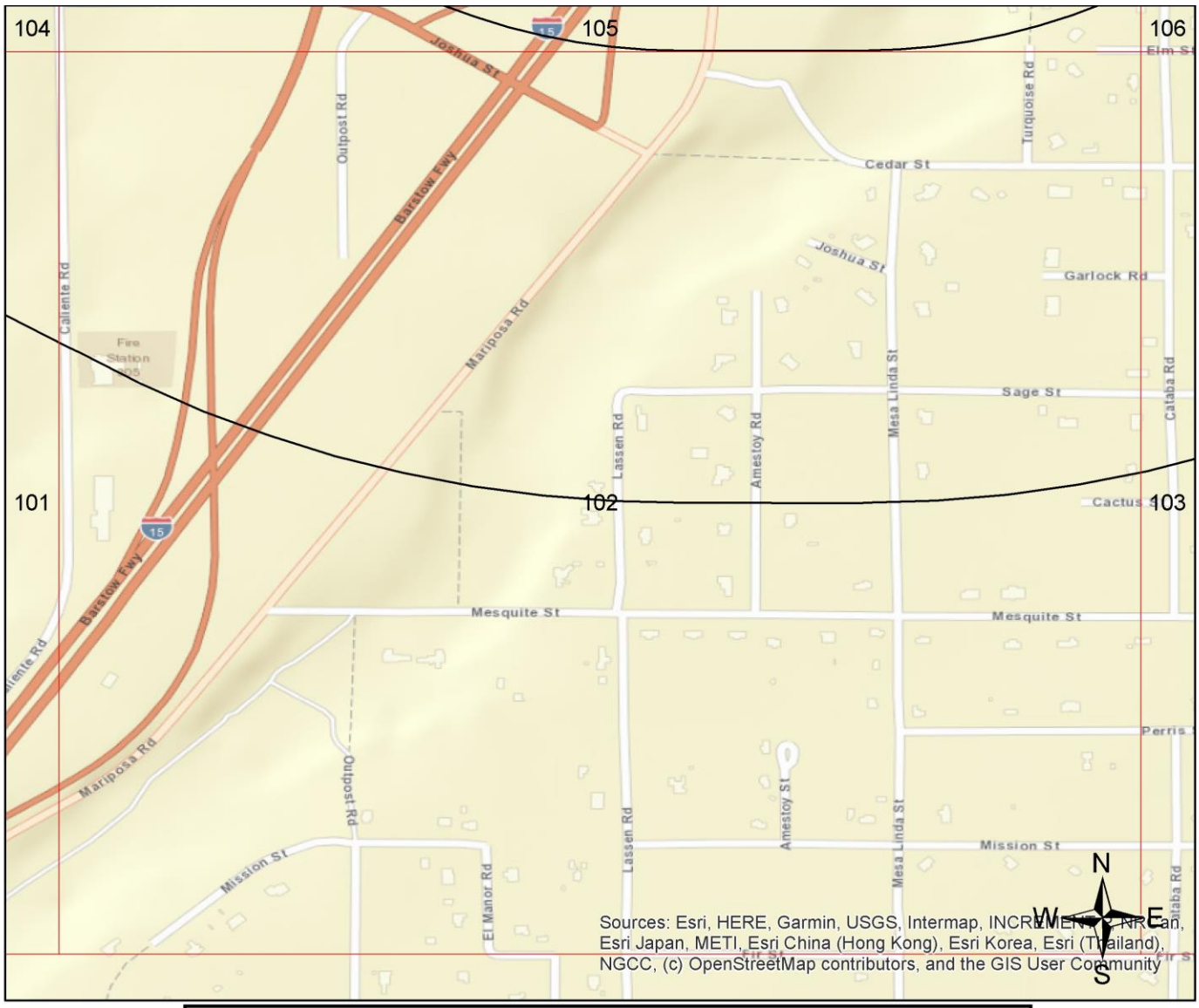
# GRID MAP 101




All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# GRID MAP 102




**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# GRID MAP 103



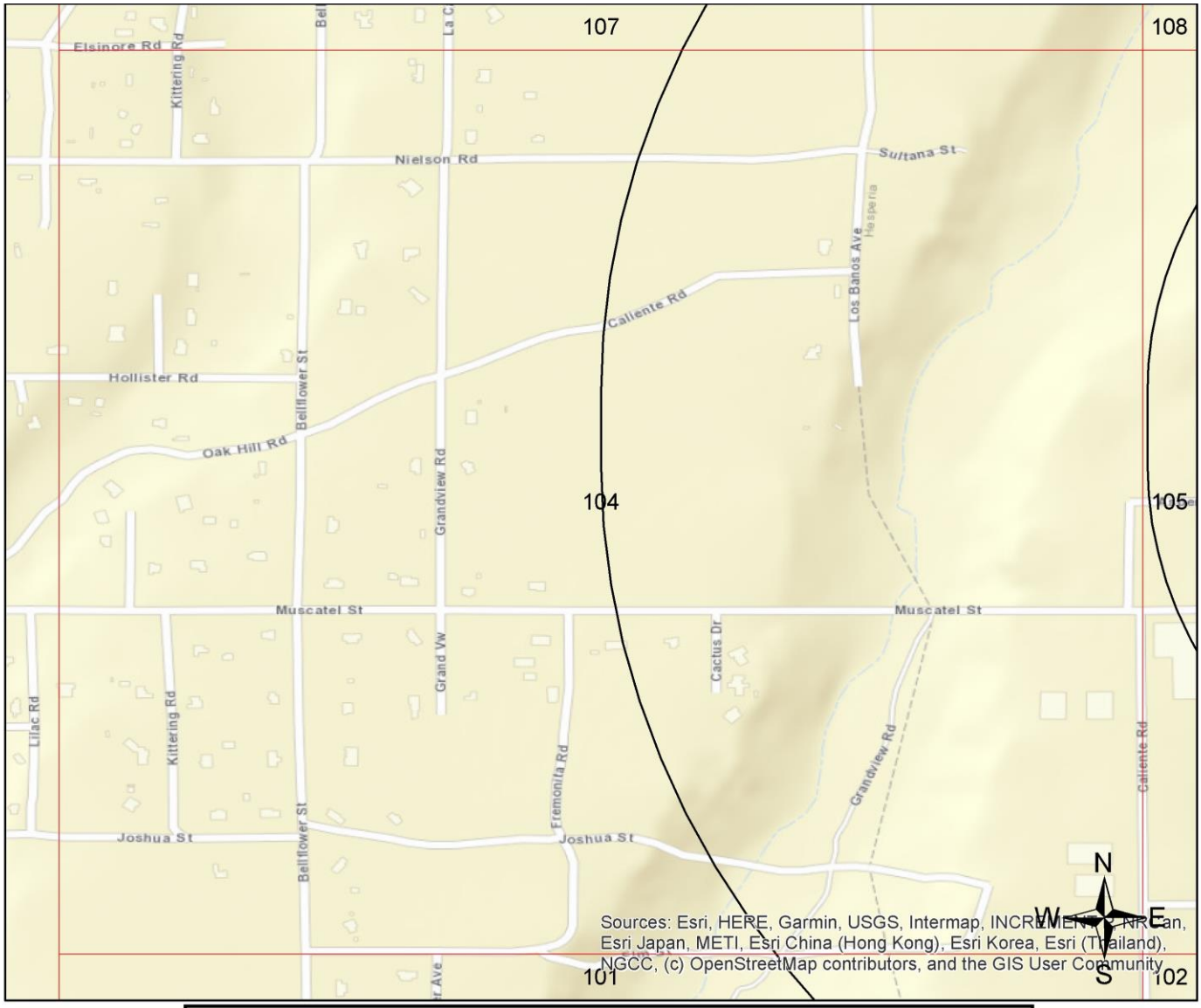

**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

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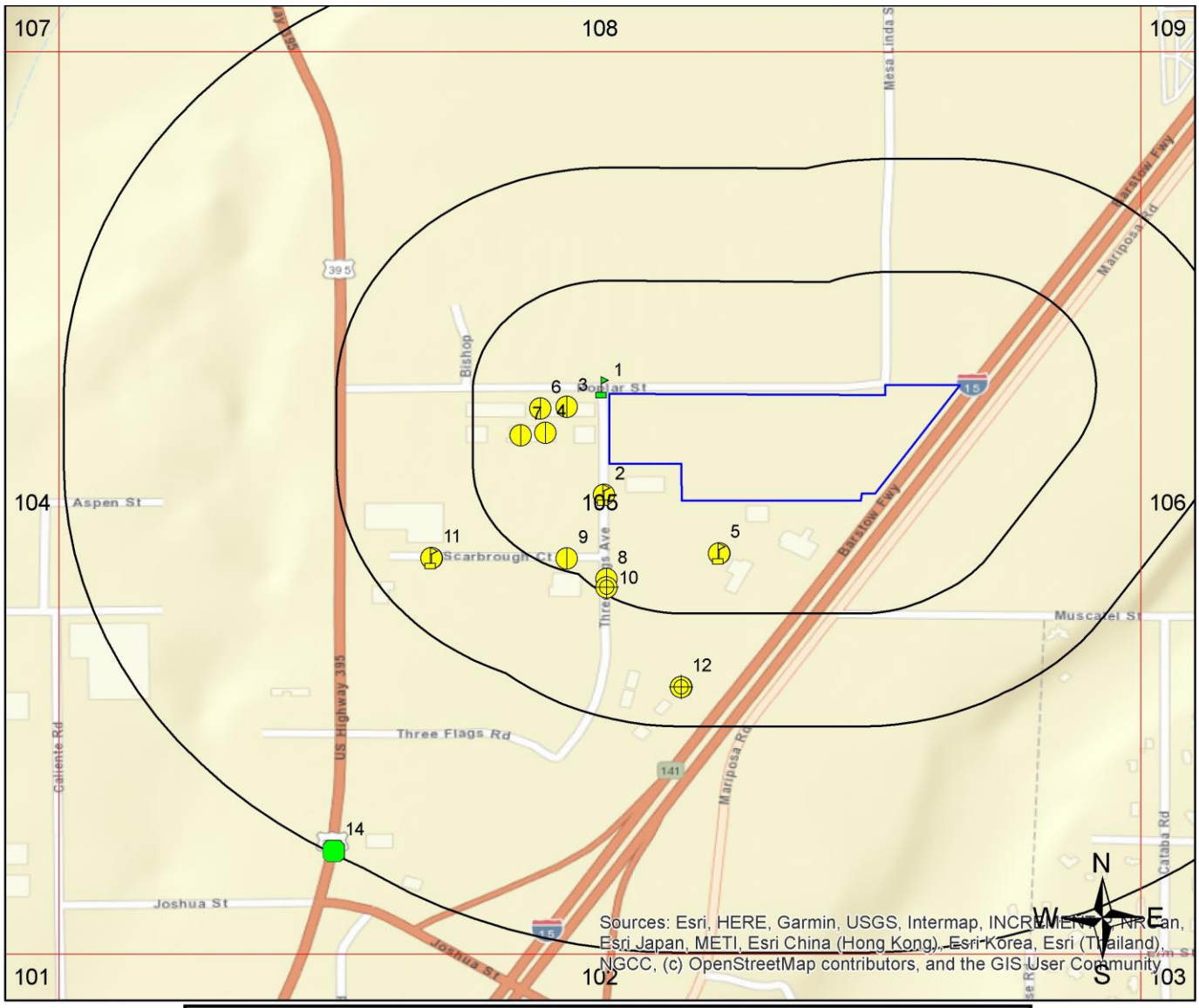
# GRID MAP 104




All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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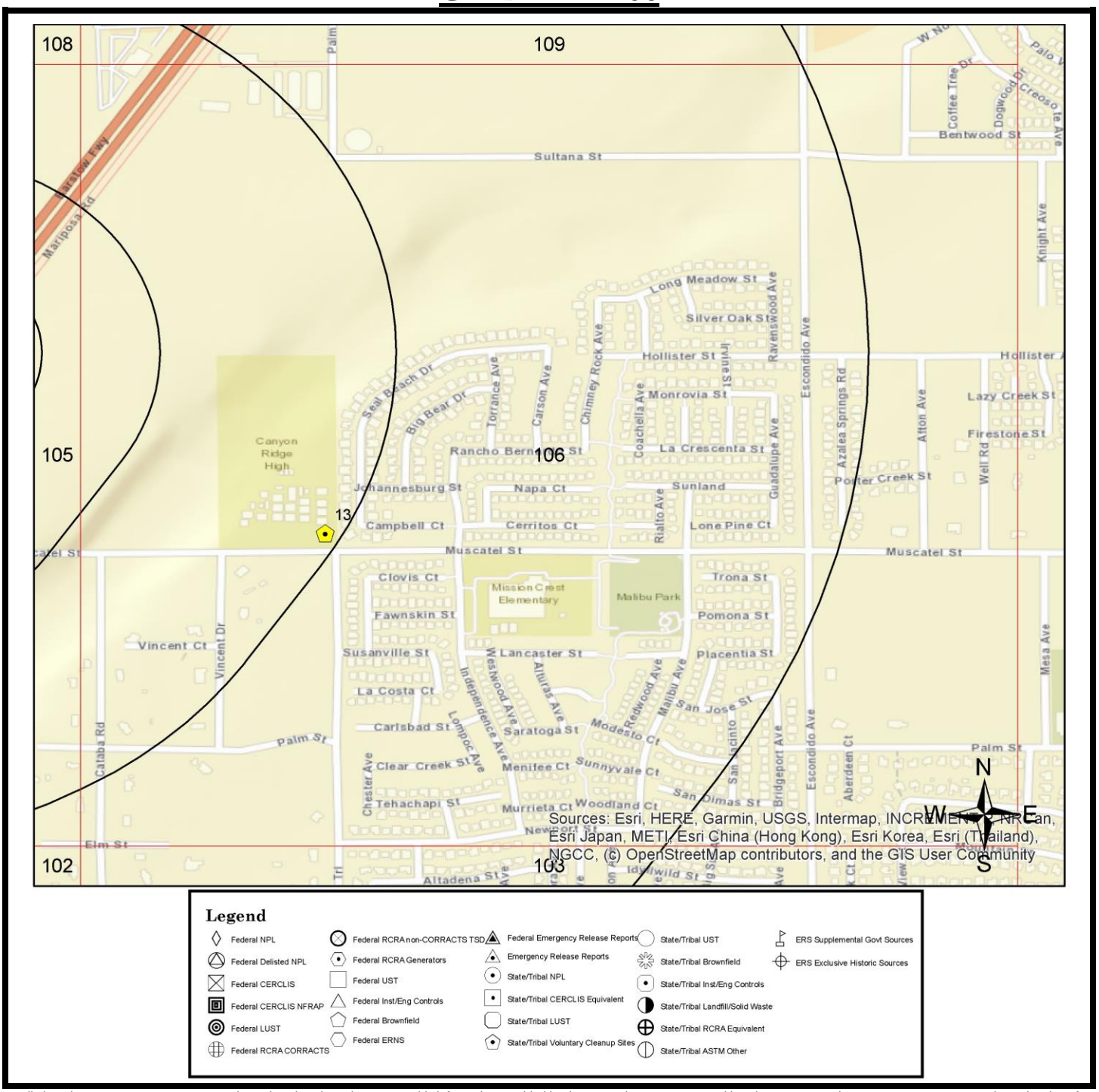
# GRID MAP 105




All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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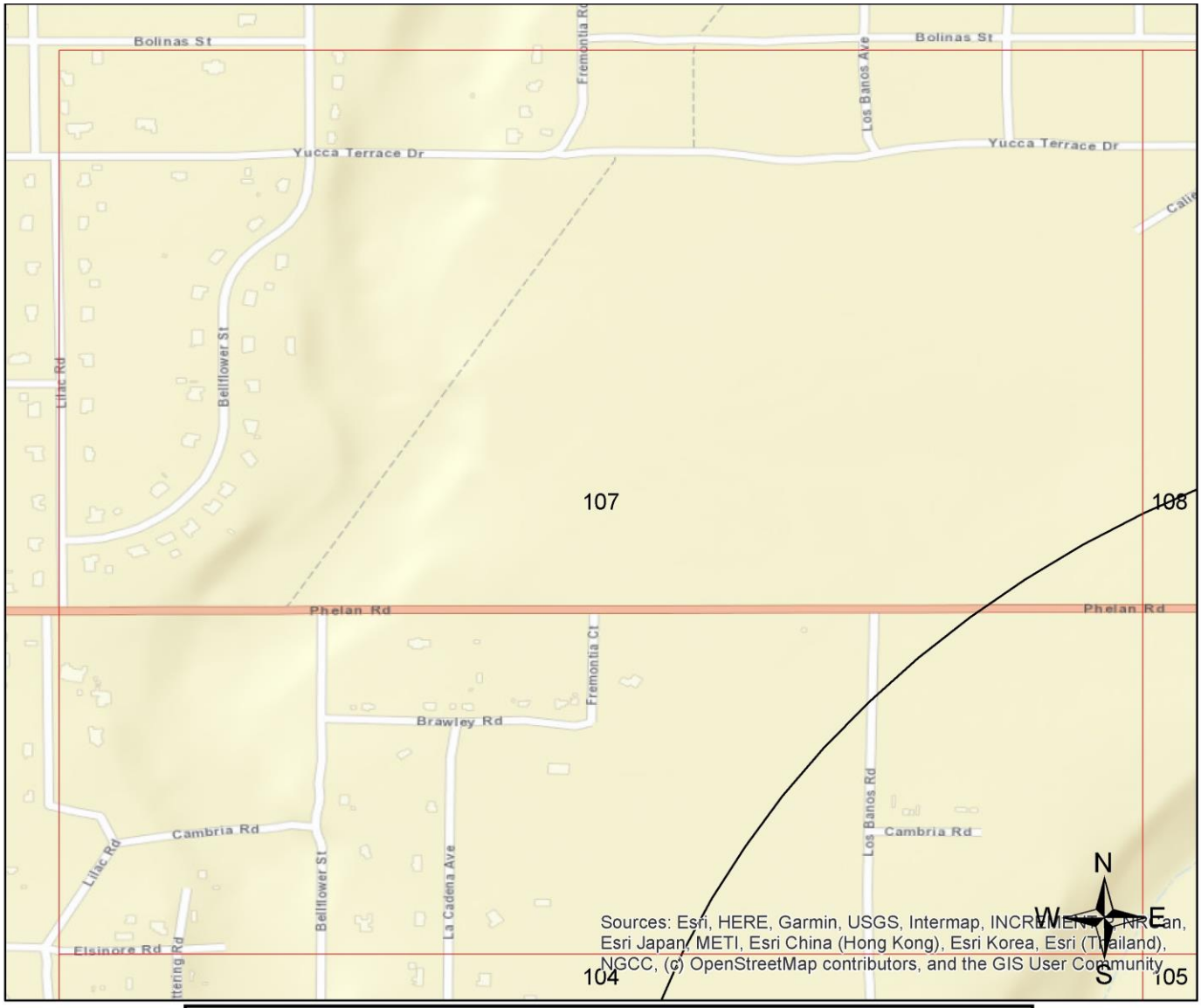
# GRID MAP 106




All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# GRID MAP 107



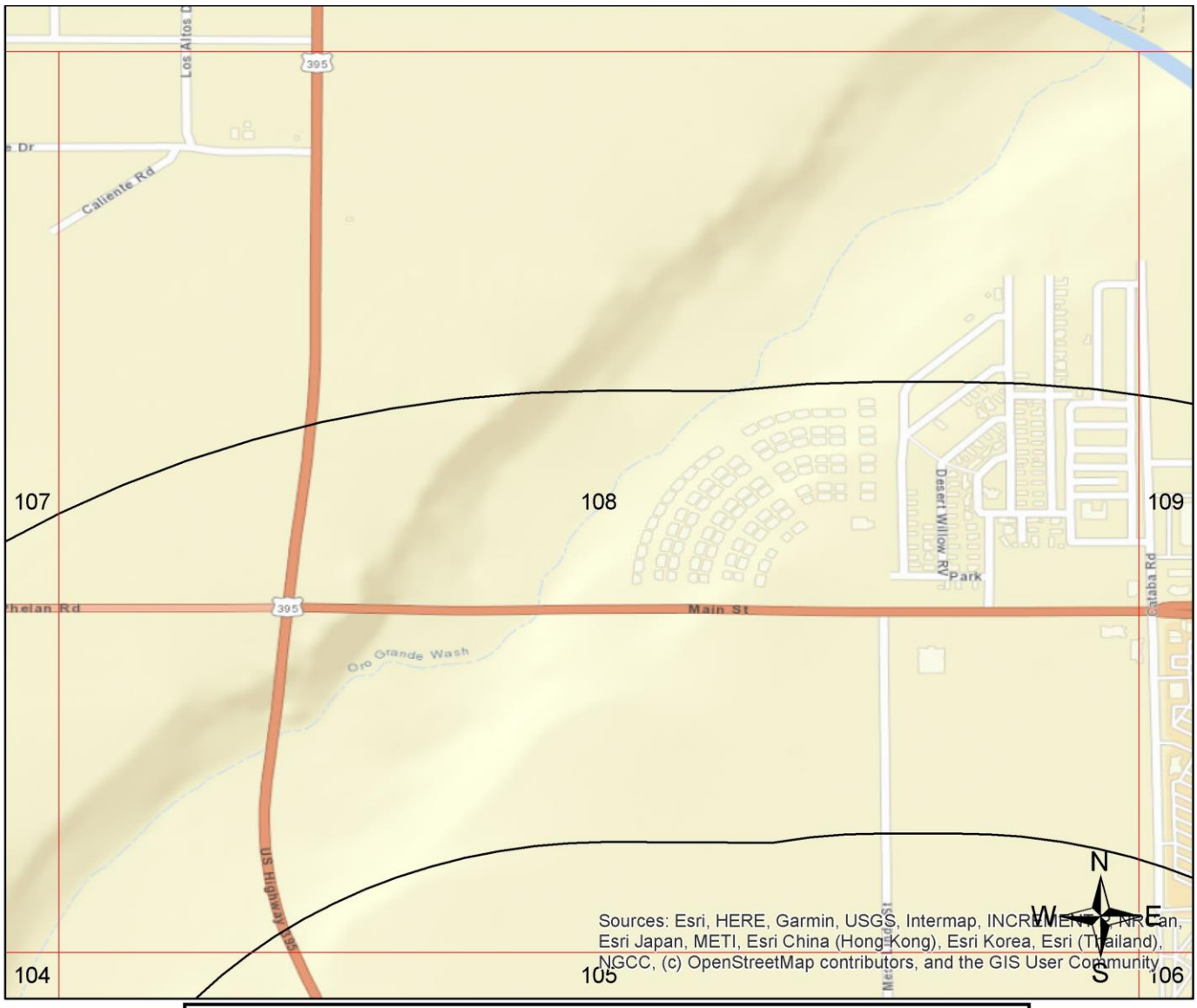

**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

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# GRID MAP 108



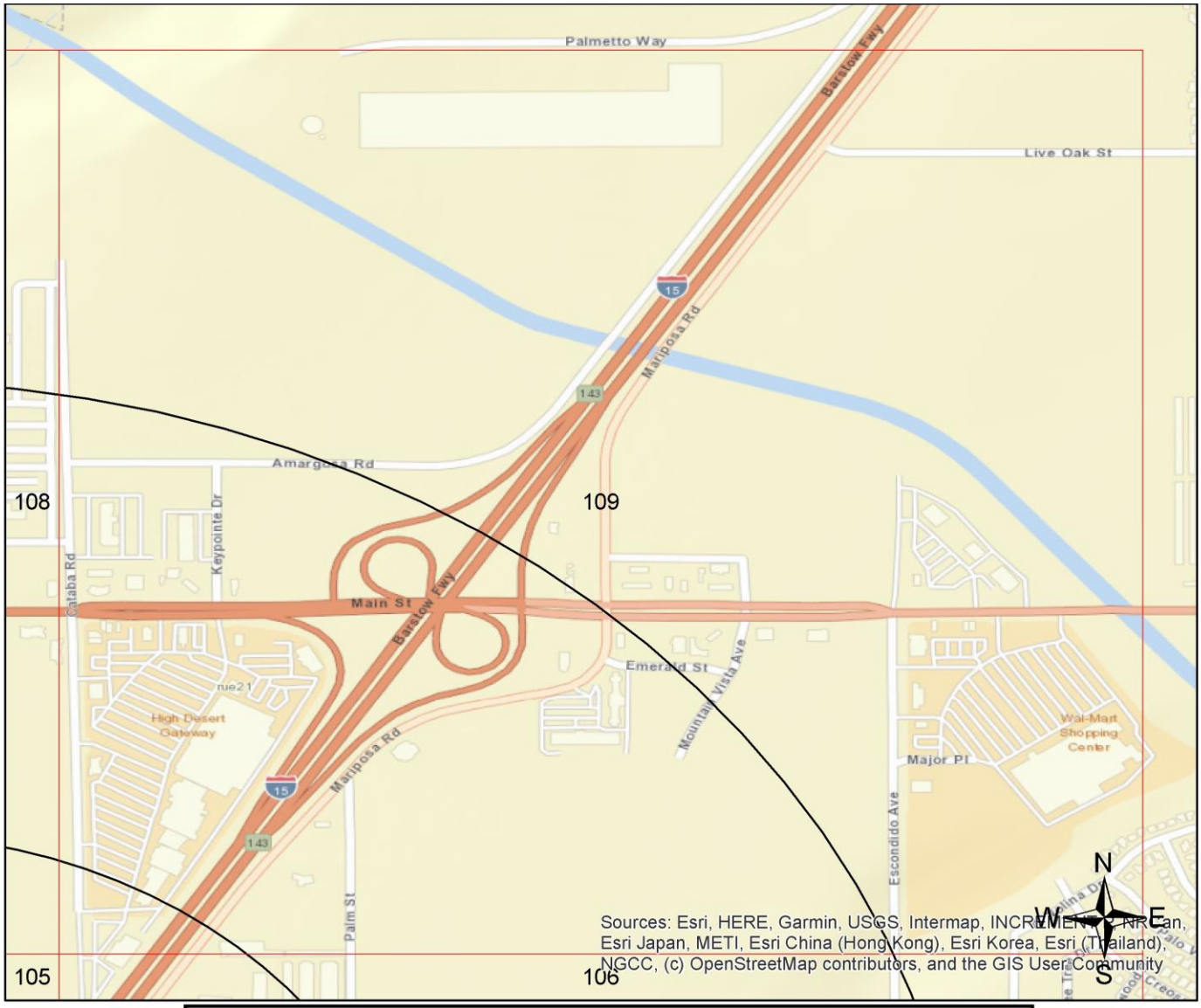

**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# GRID MAP 109



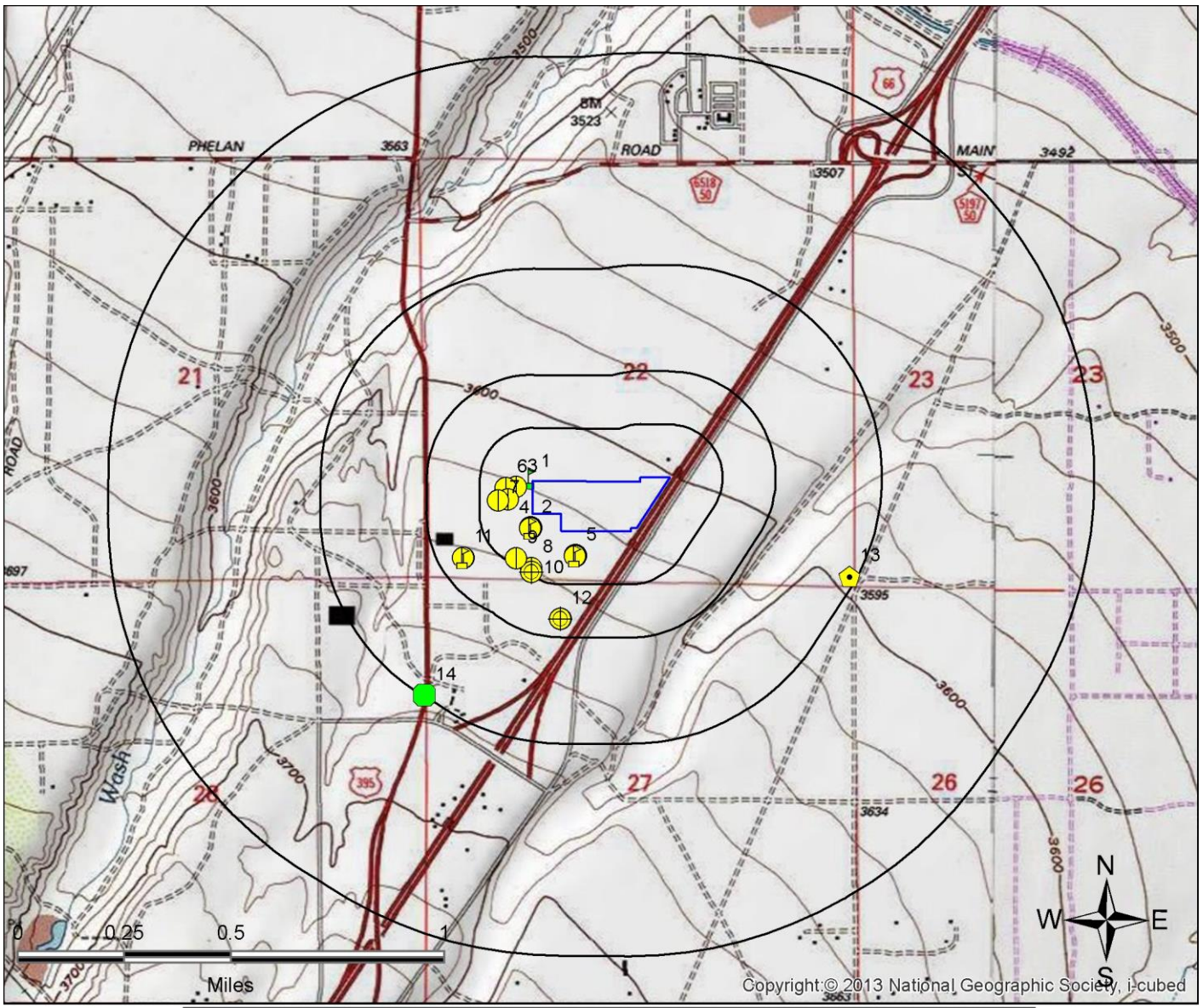

**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in YELLOW have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# 1-MILE TOPOGRAPHIC MAP W/OCCURRENCES (MAP4)

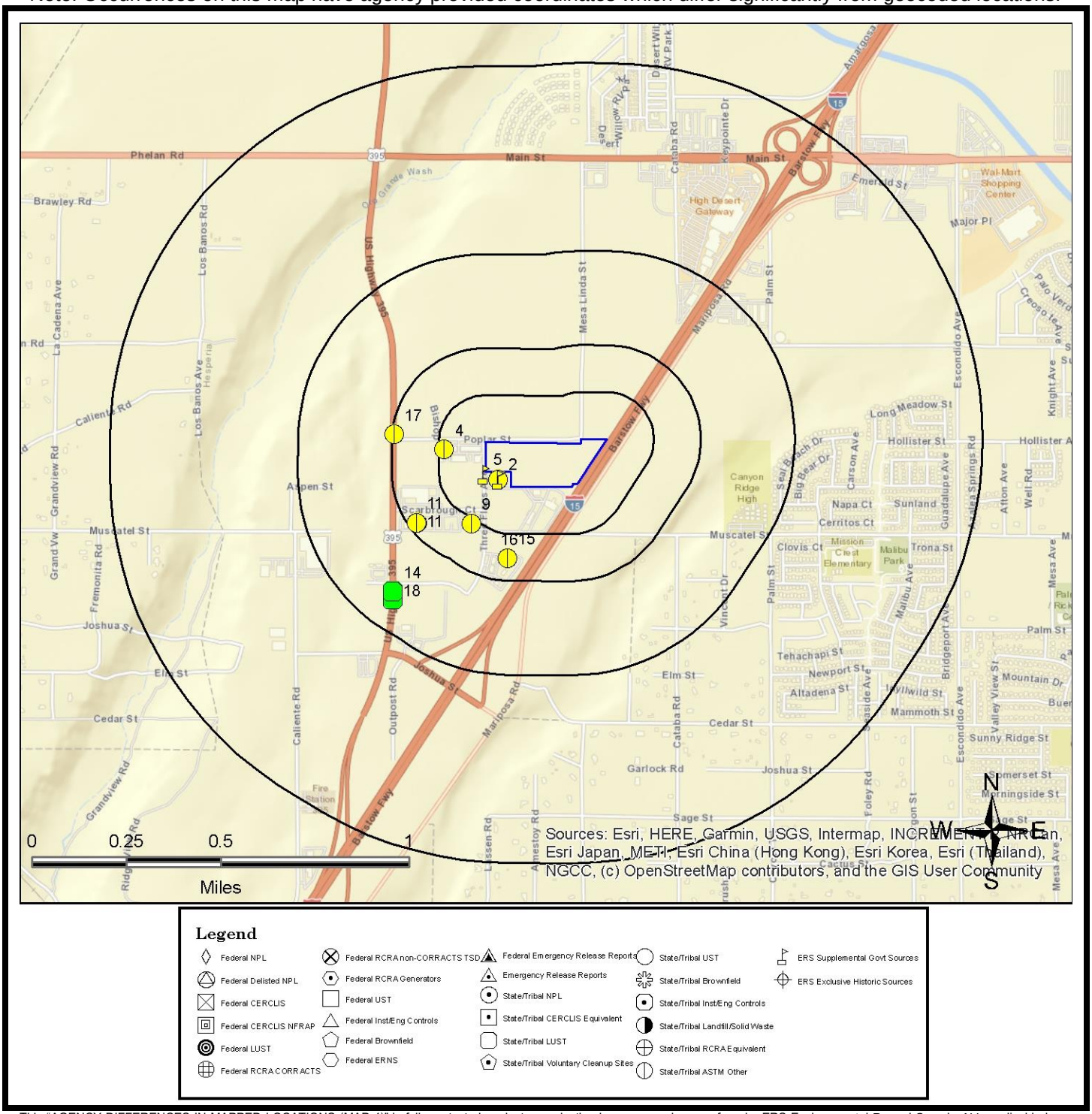



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.


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# AGENCY DIFFERENCES IN MAPPED LOCATIONS (MAP5)

Note: Occurrences on this map have agency provided coordinates which differ significantly from geocoded locations.




**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORR ACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

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# SUMMARY OF AGENCY DIFFERENCES

| MAP ID | ID / SITE NAME | ADDRESS / DATABASE | AGENCY COORDINATES | DISTANCE (MILES) | DIRECTION |
|---|---|---|---|---|---|
| 2 | 10400761<br>High Desert Truck and Trailer | 8995 Three Flags Ave<br>CERS-CA | -117.39427,<br>34.41426 | 0.02 | S |
| 2 | 169689<br>High Desert Truck and Trailer | 8995 THREE FLAGS AVE<br>CRSP-CA | -117.39427,<br>34.41426 | 0.02 | S |
| 2 | 110065650352<br>VVG FACILITY #7 | 8995 THREE FLAGS AVE<br>FRS-US | -117.39427,<br>34.41426 | 0.02 | S |
| 4 | 10762693<br>Superior Pool Products LLC #548A | 12221 Poplar St Bldg E<br>CERS-CA | -117.39679,<br>34.41542 | 0.11 | W |
| 4 | 437884<br>Superior Pool Products LLC #548A | 12221 POPLAR ST BLDG E<br>CRSP-CA | -117.39679,<br>34.41542 | 0.11 | W |
| 5 | 110033211245<br>ZIPPY LUBE-A-TRUCK, INC. | 8899B THREE FLAGS AVENUE<br>FRS-US | -117.39496,<br>34.41445 | 0.01 | SW |
| 9 | 10312237<br>DIRECTV | 12269 SCARBROUGH CT<br>CERS-CA | -117.39551,<br>34.41257 | 0.14 | S |
| 11 | 10049065<br>DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT<br>CERS-CA | -117.39806,<br>34.41259 | 0.23 | SW |
| 11 | 391724<br>DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT<br>CRSP-CA | -117.39805,<br>34.41259 | 0.23 | SW |
| 11 | 243095<br>DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT<br>UST-CA | -117.39806,<br>34.41259 | 0.23 | SW |
| 11 | 391724<br>DOUBLE EAGLE TRANSPORTATIO N | 12135 SCARBROUGH CT<br>UST-CRSP-CA | -117.39805,<br>34.41259 | 0.23 | SW |
| 14 | T0607144072<br>PILOT #381 | 8701 HIGHWAY 395<br>LUST-Closed-CA | -117.39915,<br>34.40992 | 0.4 | SW |
| 15 | 10758478<br>Verizon Wireless: Highway 395 | 8853 Three Flags Ave<br>CERS-CA | -117.39383,<br>34.41123 | 0.19 | S |
| 16 | 435257<br>Verizon Wireless: Highway 395 | 8853 THREE FLAGS AVE<br>CRSP-CA | -117.39383,<br>34.41123 | 0.19 | S |

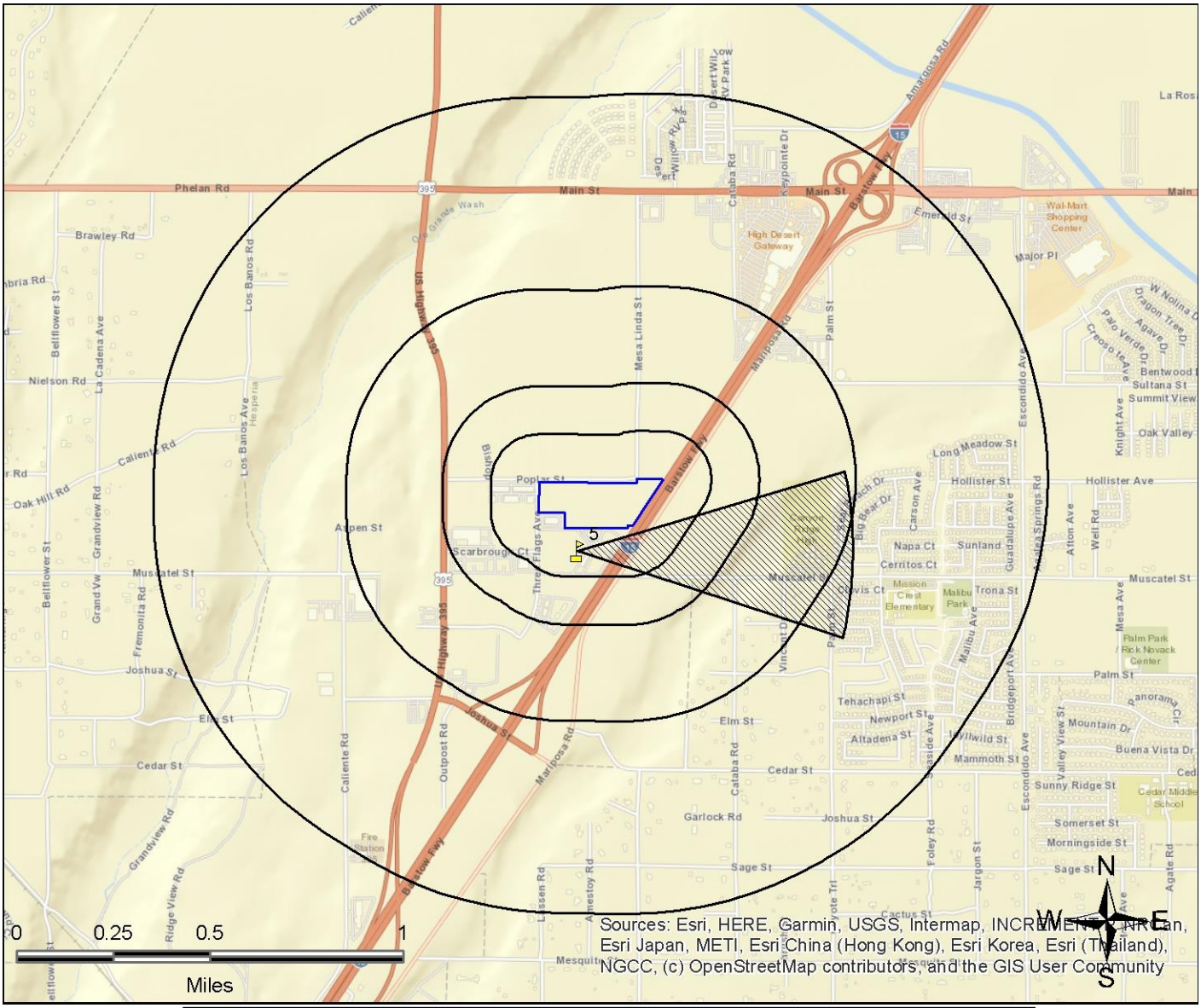

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| MAP ID | ID / SITE NAME | ADDRESS / DATABASE | AGENCY COORDINATES | DISTANCE (MILES) | DIRECTION |
|---|---|---|---|---|---|
| 17 | 495979<br>STANDARD ABRASIVES | 8981 STATE HIGHWAY 395<br>CRSP-CA | -117.39914, 34.416 | 0.24 | W |
| 18 | T0607100957<br>TIMOTHY LANE | 8685 US HIGHWAY 395<br>LUST-Closed-CA | -117.39916, 34.40964 | 0.42 | SW |


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# MAPPED AIR PERMITS WITH POTENTIAL DISPERSION (MAP6)

Note: Occurrences on this map are reported in Air Quality databases. Potential air plumes are drawn in the direction of the prevailing wind.




**Legend**

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency/source. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Potential air dispersion plumes are depicted to graphically show the direction contaminates may travel based on prevailing wind data and provide a visual screening tool only. Actual direction will vary especially by season. Depending on the actual contaminate, amount released, and other variables, the distance from the source the contaminate may travel can and will vary. Interpretation and review of all the actual relevant data by an environmental professional is recommended before making any decisions, conclusions or otherwise based on the map depictions, air data, and potential air dispersion plumes.

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# LISTED OCCURRENCE DETAILS

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.01 miles NW | 3620 ft | 1 |
| **SITE NAME** | | | **MAPS** | **ID** |
| B & D Industrial Park | | | 1, 4 | 338278 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| Popular St & Three Flags Ave | | | Hesperia | 92345 |

**DETAILS**

Original Database: NPDES-SW-CA
Last Agency Status: Listed
Archive Date: 06/01/16
No Longer Listed-Registered Meas ID: 338278
Registered Meas Type: Construction
WDID: 6B36C350089
Received Date: 5/9/2008
Processed Date: 12/20/2007
Termination Date: 6/8/2010
Status Code Name: Terminated
Status Date: 6/16/2010
REGION: Not Reported
County Code: 36
Place Size: 3
Place Size Unit: Acres
Facility County: San Bernardino
Facility Contact Name: Bob Carson
Facility Contact Title: Not Reported
Facility Contact Phone: 999-999-9999
Facility Contact Phone Extension: Not Reported
Facility Contact Email Address: Not Reported
Operator Name: Destin Steel Inc
Operator Address: 12127 Mallcenter Blvd A 171
Operator City: Victoville
Operator State: California
Operator Zip: 92392
Operator Contact Name: Dan Higgins
More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| High Desert Truck and Trailer | 1, 4 | 10400761 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8995 Three Flags Ave | Hesperia | 92345 |

**DETAILS**

General Program & Facility Information
CERS ID: 10400761
Facility ID: FA0016142
Facility Regulator Key ID: FA0016142
Organization Code: 90363385
Business/Organization Name: Velocity Vehicle Group (VVG)
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business CERS User Accounts: 9
Facility Count for Business: 16
Last Submittal Date (any element): 7/9/2018 8:28:02 AM
Count of Submitted Elements: 21
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 15
Property Owner Name: Brad Fauvre & Conan Barker
Property Owner Phone Number: (562) 447-1203
Property Owner Mailing Address: 2429 Peck Road
Property Owner Mailing City: Whittier
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 90601
Property Owner Mailing Country: United States

More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| High Desert Truck and Trailer | 1, 4 | 169689 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8995 THREE FLAGS AVE | HESPERIA | 92345 |

**DETAILS**

Site Regulated Program Information
Site ID: 169689
Site EI ID: 10400761
Agency Provided Latitude: 34.41426
Agency Provided Longitude: -117.39427

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 12/14/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): GENERATOR INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 12/14/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department

More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.03 miles S | 3632 ft | 2 |
| **SITE NAME** | | | **MAPS** | **ID** |
| VVG FACILITY #7 | | | 1, 4 | 110065650352 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8995 THREE FLAGS AVE | | | HESPERIA | 92345 |
| **DETAILS** | | | | |

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110065650352
Create Date: 13-OCT-2015 12:56:11
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.03 miles S | 3632 ft | 2 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Tanks Ent LLC | | | 1, 4 | 278713 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8995 Three Flags Avenue | | | Hesperia | 92345 |


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| DETAILS |
|---|
| Original Database: NPDES-SW-CA<br>Last Agency Status: Listed<br>Archive Date: 06/01/16<br>No Longer Listed-Registered Meas ID: 278713<br>Registered Meas Type: Construction<br>WDID: 6B36C335897<br>Received Date: 5/9/2008<br>Processed Date: 8/5/2005<br>Termination Date: 6/7/2010<br>Status Code Name: Terminated<br>Status Date: 6/16/2010<br>REGION: Not Reported<br>County Code: 36<br>Place Size: 1<br>Place Size Unit: Acres<br>Facility County: San Bernardino<br>Facility Contact Name: Rob Immerman<br>Facility Contact Title: Not Reported<br>Facility Contact Phone: 714-904-0994<br>Facility Contact Phone Extension: Not Reported<br>Facility Contact Email Address: Not Reported<br>Operator Name: Tanks Ent LLC<br>Operator Address: 14530 Whittier Blvd<br>Operator City: Whittier<br>Operator State: California<br>Operator Zip: 90605<br>Operator Contact Name: Brian Tanklage<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| HWIS-CA | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| HIGH DESERT TRUCK & TRAILER | 1, 4 | CAL000320679 |
| **ADDRESS** | **CITY** | **ZIP** |
| 8995 THREE FLAGS AVE STE B&C | VICTORVILLE | 92344 |


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| DETAILS |
|---|
| Facility Information<br>EPA ID: CAL000320679<br>Facility County: 36<br>Mailing Street: 2429 S PECK RD<br>Mailing City: WHITTIER<br>Mailing State: CA<br>Mailing Zip: 906010000<br>Contact Name: DEVIN BECK<br>Contact Phone: Not Reported<br><br>Generator Details<br>Year: 2019<br>TONS: Not Reported<br>TSD EPA ID: AZR000521146<br>Category Code: 352<br>Category Description: Other organic solids<br>Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)<br><br>Year: 2019<br>TONS: Not Reported<br>TSD EPA ID: CAT080013352<br>Category Code: 223<br>Category Description: Unspecified oil-containing waste<br>Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT<br><br>Year: 2019<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.03 miles S | 3632 ft | 2 |

| SITE NAME | MAPS | ID |
|---|---|---|
| HIGH DESERT TRUCK & TRAILER | 1, 4 | CAL000320679 |
| **ADDRESS** | **CITY** | **ZIP** |
| 8995 THREE FLAGS AVE STE B&C | VICTORVILLE | 92344 |


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| DETAILS |
|---|

Additional details may be found online using the following link:

https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000320679
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: NEW CAR DEALERS
Active Site Indicator: H----
Owner Name: LOS ANGELES TRUCK SERVICE LLC
Operator Name: DEVIN BECK
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20070613
Acknowledge Flag Date: 20070613
Contact First Name: DEVIN
Contact Last Name: BECK
Contact Street 1: 2429 S. PCK RD.
Contact City: WHITTIER
Contact State: CA
Contact Zip: 90601-0000
Contact Phone: 909-510-4272
Contact E-mail Address: DBECK@VVGTRUCK.COM
Universal Waste Destination Facility: Y

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.04 miles W | 3623 ft | 3 |

| SITE NAME | MAPS | ID |
|---|---|---|
| THE LITZENBERGER COMPANY | 1, 4 | FA0011408-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 POPLAR ST 14 | HESPERIA | 92345 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0011408<br>Address2: Not Reported<br>Owner Information: LITZENBERGER, TROY<br>Contact Name: TROY LITZENBERGER<br>Mailing Address: P.O. BOX 943, WRIGHTWOOD, CA 92397-0943<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0019744<br>Program Element Code: 4221<br>Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES<br>Status: INACTIVE<br>To: 2/28/2013 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles W | 3627 ft | 4 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Superior Pool Products LLC #548A | | | 1, 4 | 10762693 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12221 Poplar St Bldg E | | | Hesperia | 92344 |


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| DETAILS |
|---|
| General Program & Facility Information<br>CERS ID: 10762693<br>Facility ID: Not Reported<br>Facility Regulator Key ID: Not Reported<br>Organization Code: 90713275<br>Business/Organization Name: Superior Pool Products LLC #548A<br>Multiple Jurisdictional Business? (Y/N): No<br>Business Origin: Business<br>Count of Business CERS User Accounts: 1<br>Facility Count for Business: 1<br>Last Submittal Date (any element): Not Reported<br>Count of Submitted Elements: 0<br>Remote Facility? (Y/N): No<br>Small Quantity Generator Facility? (Y/N): No<br>Local Facility Grouping: Not Reported<br><br>Facility Specific Information<br>Assessor Parcel Number (APN): Not Reported<br>Number of Employees: 4<br>Property Owner Name: JT & LT Family LLC<br>Property Owner Phone Number: 714-981-3623<br>Property Owner Mailing Address: 310 Goetz Avenue<br>Property Owner Mailing City: Santa Ana<br>Property Owner Mailing State: CA<br>Property Owner Mailing Zip Code: 92707<br>Property Owner Mailing Country: United States<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles W | 3627 ft | 4 |

| SITE NAME | MAPS | ID |
|---|---|---|
| Superior Pool Products LLC #548A | 1, 4 | 437884 |
| **ADDRESS** | **CITY** | **ZIP** |
| 12221 POPLAR ST BLDG E | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 437884<br>Site EI ID: 10762693<br>Agency Provided Latitude: 34.41542<br>Agency Provided Longitude: -117.39679<br><br>Program Description: Chemical Storage Facilities<br><br>Evaluation Information<br>: Not Reported<br>:Violation Information<br>: Not Reported<br>:Enforcement Information<br>: Not Reported<br>:Chemical Information<br>: Not Reported<br>:Coordinate Information<br>: Not Reported<br>: |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AIR-DIST-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Zippy Lube | | | 1, 4 | 842-MD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 Three Flags Avenue | | | Hesperia | 92345 |


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| DETAILS |
|---|
| Note: This is an ERS assigned ID.<br>Responsible Agency: Mohave Valley AQMD<br>Permit Number: T010147<br>Facility ID: 3040<br>District ID: 1<br>Permit Type: T<br>Permit Status Code: PTO<br>Permit Status: Permit To Operate<br>Permit Desc: WASTE OIL TANK<br>Employee Assigned: 62<br>Address Region: Not Reported<br>Fax Nbr: Not Reported<br>Emission Calc: Not Reported<br>Expired Date: 3/31/2018 11:59:59 PM<br>Under Construction: False<br>Last Renewal Date: Not Reported<br>Secondary APC: Not Reported<br>Primary APC: Not Reported<br>Est Comp Date: Not Reported<br>Est Start Date: Not Reported<br>Issue Date: 9/20/2017 6:27:00 PM<br>Application Date: 3/13/2008<br>Permit Printed: True<br>Batch Update: False<br>Permit Detail Type: S<br>Title VPMTwo: False<br>Confidential: False<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AIR-DIST-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| IRONMAN RENEWAL LLC | 1, 4 | 177957-SC |
| **ADDRESS** | **CITY** | **ZIP** |
| 8899 THREE FLAGS | HESPERIA | 92345 |


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| DETAILS |
|---|
| District: South Coast AQMD<br>Compliance URL:<br>http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=177957<br>Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.<br>Facility Id: 177957<br>County Code: SB<br>County: San Bernardino<br>Facility Status Code: A<br>Facility Status: ACTIVE<br>Number of Employees: 0<br>Location Zip Code Extension: Not Reported<br>Facility Representative First Name: YAMIL<br>Facility Representative Last Name: TOMASSINI<br>Location Area Code: 951<br>Location Phone Number: 5202995<br>Location Phone Extension: Not Reported<br>Mailing Address: 2535 ANSELMO DR<br>Mailing City: CORONA<br>Mailing State: CA<br>Mailing Zip Code: 92879<br>Mailing Zip Code Extension: 8092<br>Mailing Area Code: 951<br>Mailing Phone Number: 5202995<br>Mailing Phone Extension: Not Reported<br>Mailing Representative First Name: YAMIL<br>Mailing Representative Last Name: TOMASSINI<br><br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AST-CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1, 4 | 172882 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 172882<br>EI ID: 10049617<br>Agency Provided Address: 8899 THREE FLAGS AVE<br>Agency Provided Latitude: 34.413147<br><br>Agency Provided Longitude: -117.39313<br>Program Description: Aboveground Petroleum Storage<br><br>Evaluation Information (2017 to present)<br>Evaluation Date: 3/10/2020<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HMRRP<br>Evaluation Source: CERS<br><br>Evaluation Date: 3/10/2020<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HW<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Little Sister's Truck Wash | | | 1, 4 | 10128901 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 Three Flags Ave | | | Hesperia | 92344 |


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| DETAILS |
|---|

General Program & Facility Information
CERS ID: 10128901
Facility ID: FA0010378
Facility Regulator Key ID: FA0010378
Organization Code: 90093058
Business/Organization Name: Little Sister's Truck Wash
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 3
Last Submittal Date (any element): 2/12/2018 11:31:19 PM
Count of Submitted Elements: 18
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 24
Property Owner Name: Renald Anelle
Property Owner Phone Number: 760-731-3170
Property Owner Mailing Address: 25 Rollingview Lane
Property Owner Mailing City: Fallbrook
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92028
Property Owner Mailing Country: United States

More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| ZIPPY LUBE-A-TRUCK | 1, 4 | 10049617 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 Three Flags Ave | Hesperia | 92344 |


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| DETAILS |
|---|

General Program & Facility Information
CERS ID: 10049617
Facility ID: FA0009125
Facility Regulator Key ID: FA0009125
Organization Code: 90135682
Business/Organization Name: ZIPPY LUBE
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 6
Last Submittal Date (any element): 8/8/2018 10:46:18 AM
Count of Submitted Elements: 20
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 2
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-AST-CA | Listed | 0.06 miles S | 3634 ft | **5** |

| SITE NAME | MAPS | ID |
|---|---|---|
| ZIPPY LUBE-A-TRUCK | 1, 4 | FA0009125-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE B | Hesperia | 92344 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino Division of Environmental Health Services<br>Facility ID: FA0009125<br>Address2: Not Reported<br>Owner Information: Ren Anelle<br>Contact Name: Not Reported<br>Mailing Address: P.O. Box 7509, LAGUNA NIGUEL, CA 92607<br>Mailing Address2: Not Reported<br>Permit ID: PT0023266<br>Program Element Code: 4031<br>Permit Description: APSA 1,320-10,000 GAL FAC CAPACITY<br>Status: ACTIVE<br>To: 12/31/2018 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1, 4 | 172882 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 172882<br>Site EI ID: 10049617<br>Agency Provided Latitude: 34.413147<br>Agency Provided Longitude: -117.39313<br><br>Program Description: Aboveground Petroleum Storage<br><br>Program Description: Chemical Storage Facilities<br><br>Program Description: Hazardous Waste Generator<br><br>Evaluation Information<br>Evaluation Date: 1/9/2017<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s): ROUTINE GENERATOR INSPECTION<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HW<br>Evaluation Source: CERS<br><br>Evaluation Date: 1/9/2017<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| Little Sister's Truck Wash | | | 1, 4 | 130941 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 130941<br>Site EI ID: 10128901<br>Agency Provided Latitude: 37.271881<br>Agency Provided Longitude: -119.27023<br><br>Program Description: Chemical Storage Facilities<br><br>Program Description: Hazardous Waste Generator<br><br><br>Evaluation Information<br>Evaluation Date: 6/3/2016<br>Violations Found? (Y/N): No<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s): LITTLE SISTER'S TRUCK WASK- CUPA WASTE INSPECTION<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HW<br>Evaluation Source: CERS<br><br>Evaluation Date: 6/3/2016<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s): LITTLE SISTERS- CUPA HANDLER INSPECTION<br>Evaluation Division: San Bernardino County Fire Department<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| Little Sister's Truck Wash | 1, 4 | FA0010378-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | Hesperia | 92344 |


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| DETAILS |
|---|

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0010378
Address2: Not Reported
Owner Information: Little Sister's Truck Wash, Inc.
Contact Name: Not Reported
Mailing Address: 25 Rollingview Lane, Fallbrook, CA 92028
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0017654
Program Element Code: 4244
Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS
Status: ACTIVE
To: 5/31/2019

Permit ID: PT0017973
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1, 4 | FA0009125-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE B | | | Hesperia | 92344 |


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| DETAILS |
|---|

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0009125
Address2: Not Reported
Owner Information: Ren Anelle
Contact Name: Not Reported
Mailing Address: P.O. Box 7509, LAGUNA NIGUEL, CA 92607
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0015214
Program Element Code: 4454
Permit Description: LARGE QUANTITY GENERATOR
Status: ACTIVE
To: 12/31/2019

Permit ID: PT0015215
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 12/31/2019

Permit ID: PT0023266
Program Element Code: 4031
Permit Description: APSA 1,320-10,000 GAL FAC CAPACITY
Status: ACTIVE
To: 12/31/2019

More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | **5** |

| SITE NAME | MAPS | ID |
|---|---|---|
| LITTLE SISTER'S TRUCK WASH | 1, 4 | 110066395494 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 92344 |

| DETAILS |
|---|

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066395494
Create Date: 14-OCT-2015 11:18:47
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK, INC. | | | 1, 4 | 110033211245 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899B THREE FLAGS AVENUE | | | HESPERIA | 92345- |
| **DETAILS** | | | | |

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110033211245
Create Date: 29-FEB-2008 02:16:06
Program System: UORS
Interest Type(s): STATE MASTER

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| FRS-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| ZIPPY LUBE-A-TRUCK | | | 1, 4 | 110066206484 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |
| **DETAILS** | | | | |

FRS Facility Detail Report URL:
http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066206484
Create Date: 14-OCT-2015 10:26:38
Program System: CA-ENVIROVIEW
Interest Type(s): STATE MASTER


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | Name Changed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| LITTLE SISTERS TRUCK WASH | 1, 4 | FA0010378-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 92345 |

**DETAILS**

Original Database: CUPA-CA
Last Agency Status: Listed
Archive Date: 06/04/17
Name Changed-County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0010378
Address2: Not Reported
Owner Information: LITTLE SISTER'S TRUCK WASH
Contact Name: Not Reported
Mailing Address: 25 ROLLING VIEW LN, FALLBROOK, CA 92028
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0017654
Program Element Code: 4244
Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS
Status: ACTIVE
To: 5/31/2017

Permit ID: PT0017973
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2017

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | 1, 4 | CAL000344771 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | OAK HILLS | 923440497 |


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| DETAILS |
|---|
| Original Database: HWIS-CA<br>Last Agency Status: Listed<br>Archive Date: 10/07/21<br>No Longer Listed-EPA ID: CAL000344771<br>Facility County: 36<br>Mailing Street: 2535 ANSELMO DR<br>Mailing City: ANSELMO<br>Mailing State: CA<br>Mailing Zip: 928798092<br>Contact Name: SAM MCMILLAN<br>Contact Phone: 9517353710<br><br>Year: 2016<br>TONS: 0.1<br>TSD EPA ID: AZD081705402<br>Category Code: 331<br>Category Description: Off-specification, aged or surplus organics<br>Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)<br><br>Year: 2015<br>TONS: 0.2<br>TSD EPA ID: AZD081705402<br>Category Code: 352<br>Category Description: Other organic solids<br>Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)<br><br>Year: 2015<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| IRONMAN RENEWAL DBA ZIPPY LUBE A TRUCK | 1, 4 | 54FDFFFA-CAL000344771 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | OAK HILLS | 92344 |

| DETAILS |
|---|
| Previous List: HWIS-CA<br>Archived: 4/2/2012 |


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-CA | No Longer Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| ANELLE MANAGEMENT SERVICES INC DBA FLEET CREW | 1, 4 | CAL000416670 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 923440497 |

**DETAILS**

Original Database: HWIS-CA
Last Agency Status: Listed
Archive Date: 10/07/21
No Longer Listed-EPA ID: CAL000416670
Facility County: 36
Mailing Street: 30025 ALICIA PKWY
Mailing City: LAGUNA NIGUEL
Mailing State: CA
Mailing Zip: 92677
Contact Name: CRAIG PHILLIPS
Contact Phone: 9516600400

Year: 2017
TONS: 1.665
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2017
TONS: 0.22935
TSD EPA ID: CAD097030993
Category Code: 491
Category Description: Unspecified sludge waste
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

Year: 2017
More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| HWIS-CA | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| FLEETCREW | | | 1, 4 | CAL000416670 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | HESPERIA | 92344 |

**DETAILS**

Facility Information
EPA ID: CAL000416670
Facility County: 36
Mailing Street: "29911 NIGUEL ROAD "
Mailing City: LAGUNA NIGUEL
Mailing State: CA
Mailing Zip: 926070000
Contact Name: CRAIG PHILLIPS
Contact Phone: Not Reported

Generator Details
Year: 2019
TONS: Not Reported
TSD EPA ID: CAD097030993
Category Code: 352
Category Description: Other organic solids
Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.06 miles S | 3634 ft | 5 |
| **SITE NAME** | | | **MAPS** | **ID** |
| LITTLE SISTERS TRUCK WASH INC | | | 1, 4 | CAL000353253 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8899 THREE FLAGS AVE | | | OAK HILLS | 92344 |


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| DETAILS |
|---|
| Additional details may be found online using the following link:<br><br>https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000353253<br>Source Type: Implementer<br>Generator Status: Non-Generator<br>NAICS1: CAR WASHES<br>Active Site Indicator: H----<br>Owner Name: LITTLE SISTERS TRUCK WASH INC<br>Operator Name: JOE MCFANN<br>In Handler Universes: Y<br>In a Universe: Y<br>Universal Waste: Y<br>Universal Waste Destination Facility: Y<br><br>Receive Date: 20100610<br>Acknowledge Flag Date: 20100610<br>Contact First Name: JOE<br>Contact Last Name: MCFANN<br>Contact Street 1: 8899 THREE FLAGS AVE<br>Contact City: OAK HILLS<br>Contact State: CA<br>Contact Zip: 92344<br>Contact Phone: 760-947-4448<br>Contact FAX: 760-956-1270<br>Contact E-mail Address: RJA@YELLOWMAGIC.COM<br>Universal Waste Destination Facility: Y<br><br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.06 miles S | 3634 ft | 5 |

| SITE NAME | MAPS | ID |
|---|---|---|
| ANELLE MANAGEMENT SERVICES INC DBA FLEET | 1, 4 | CAL000416670 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8899 THREE FLAGS AVE | HESPERIA | 92344 |


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| DETAILS |
|---|
| Additional details may be found online using the following link:<br><br>https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000416670<br>Source Type: Implementer<br>Generator Status: Non-Generator<br>NAICS1: GENERAL AUTOMOTIVE REPAIR<br>Active Site Indicator: H----<br>Owner Name: ANELLE MGMT SRV INC DBA FLEET CREW<br>Operator Name: CRAIG PHILLIPS<br>In Handler Universes: Y<br>In a Universe: Y<br>Universal Waste: Y<br>Universal Waste Destination Facility: Y<br><br>Receive Date: 20160502<br>Acknowledge Flag Date: 20160502<br>Contact First Name: CRAIG<br>Contact Last Name: PHILLIPS<br>Contact Street 1: 29911 NIGUEL ROAD #7509<br>Contact City: LAGUNA NIGUEL<br>Contact State: CA<br>Contact Zip: 92607-0000<br>Contact Phone: 951-660-0400<br>Contact FAX: 951-848-0713<br>Contact E-mail Address: CRAIG.PHILLIPS@FLEETCREW.COM<br>Universal Waste Destination Facility: Y<br><br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.06 miles W | 3624 ft | 6 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DESERT DYNAMICS OFFROAD | 1, 4 | FA0012792-SBD |
| **ADDRESS** | **CITY** | **ZIP** |
| 12221 POPLAR ST BLDG B-10 | HESPERIA | 92344 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0012792<br>Address2: Not Reported<br>Owner Information: LAWSON, DAVE<br>Contact Name: DAVE LAWSON<br>Mailing Address: 12221 POPLAR ST BLDG B-10, HESPERIA, CA 92344<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0022349<br>Program Element Code: 4221<br>Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES<br>Status: INACTIVE<br>To: 10/31/2010 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.08 miles W | 3628 ft | 7 |
| **SITE NAME** | | | **MAPS** | **ID** |
| 3M OAK HILLS | | | 1, 4 | 10311793 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12221 POPLAR ST UNIT D20 | | | OAK HILLS | 92344 |


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| DETAILS |
|---|

General Program & Facility Information
CERS ID: 10311793
Facility ID: FA0013596
Facility Regulator Key ID: FA0013596
Organization Code: 90278605
Business/Organization Name: 3M OAK HILLS
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Seeding
Count of Business CERS User Accounts: 3
Facility Count for Business: 2
Last Submittal Date (any element): 3/6/2018 12:28:21 PM
Count of Submitted Elements: 21
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 2
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.08 miles W | 3628 ft | 7 |

| SITE NAME | MAPS | ID |
|---|---|---|
| 3M OAK HILLS | 1, 4 | 617 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12221 POPLAR ST UNIT D20 | OAK HILLS | 92344 |


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| DETAILS |
|---|

Site Regulated Program Information
Site ID: 617
Site EI ID: 10311793
Agency Provided Latitude: 34.41542
Agency Provided Longitude: -117.39626

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 9/29/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): HANDLER INSPECTION
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
Violation Date: 9/29/2016
Citation: HSC 6.95 25508.1(a)-(f) - California Health and Safety Code, Chapter 6.95, Section(s) 25508.1(a)-(f)
Violation Description: Failure to electronically update business plan within 30 days of any one of the following events:
A 100 percent or more increase in the quantity of a previously disclosed material.
Any handling of a previously undisclosed hazardous materials at or above reportable quantities.
A change of business address, business ownership, or business name.
A substantial change in the handler's operations that requires modification to any portion of the business plan.
Violation Note(s): Returned to compliance on 10/19/2016. Update submitted chemical inventory, facility site map, and emergency response plan.
Violation Division: San Bernardino County Fire Department
Violation Program: HMRRP
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.08 miles W | 3628 ft | 7 |
| **SITE NAME** | | | **MAPS** | **ID** |
| 3M OAK HILLS | | | 1, 4 | FA0013596-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12221 POPLAR ST UNIT D20 | | | OAK HILLS | 92344 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0013596<br>Address2: Not Reported<br>Owner Information: 3M COMPANY<br>Contact Name: Not Reported<br>Mailing Address: 8981 US HWY 395, OAK HILLS, CA 92344<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0023866<br>Program Element Code: 4244<br>Permit Description: HAZARDOUS MATERIALS 11-30 CHEMICALS<br>Status: ACTIVE<br>To: 11/30/2019 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles SW | 3642 ft | **8** |
| **SITE NAME** | | | **MAPS** | **ID** |
| High Desert Truck and Trailer | | | 1, 4 | FA0016142-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8895 THREE FLAGS AVE | | | Hesperia | 92345 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0016142<br>Address2: Not Reported<br>Owner Information: Brad Fauvre & Conan Barker<br>Contact Name: Not Reported<br>Mailing Address: 8995 Three Flags Ave., Hesperia, CA 92345<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0034884<br>Program Element Code: 4453<br>Permit Description: SMALL QUANTITY GENERATOR<br>Status: ACTIVE<br>To: 8/31/2019<br><br>Permit ID: PT0034885<br>Program Element Code: 4243<br>Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS<br>Status: ACTIVE<br>To: 8/31/2019 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| DIRECTV | | | 1, 4 | 10312237 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92345 |


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| DETAILS |
|---|

General Program & Facility Information
CERS ID: 10312237
Facility ID: FA0013884
Facility Regulator Key ID: FA0013884
Organization Code: 90430663
Business/Organization Name: DIRECTV, LLC
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business CERS User Accounts: 41
Facility Count for Business: 37
Last Submittal Date (any element): Not Reported
Count of Submitted Elements: 0
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 110
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |

| SITE NAME | MAPS | ID |
|---|---|---|
| CDM CONSTRUCTORS INC. | 1, 4 | FA0008728-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12269 SCARBROUGH CT | HESPERIA | 92345 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0008728<br>Address2: Not Reported<br>Owner Information: CDM CONSTRUCTORS INC.<br>Contact Name: JOYCE JACKSON<br>Mailing Address: 12269 SCARBROUGH COURT, HESPERIA, CA 92345-0000<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0015514<br>Program Element Code: 4221<br>Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES<br>Status: INACTIVE<br>To: 12/31/2006<br><br>Permit ID: PT0015515<br>Program Element Code: 4202<br>Permit Description: HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)<br>Status: INACTIVE<br>To: 12/31/2004 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| DIRECTV | | | 1, 4 | FA0013884-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92345 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0013884<br>Address2: Not Reported<br>Owner Information: DIRECTV<br>Contact Name: Not Reported<br>Mailing Address: 12269 SCARBROUGH CT, HESPERIA, CA 92344<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0024398<br>Program Element Code: 4241<br>Permit Description: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL<br>Status: INACTIVE<br>To: 9/30/2012 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.11 miles S | 3641 ft | 9 |
| **SITE NAME** | | | **MAPS** | **ID** |
| 3M OAK HILLS REMOTE STORAGE | | | 1, 4 | FA0012098-SBD |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12269 SCARBROUGH CT | | | HESPERIA | 92344 |

| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0012098<br>Address2: Not Reported<br>Owner Information: 3M COMPANY<br>Contact Name: 3M OAK HILLS<br>Mailing Address: 8981 US HWY 395, HESPERIA, CA 92344<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0021294<br>Program Element Code: 4250<br>Permit Description: HAZMAT HANDLER - UNSTAFFED REMOTE FACILITY<br>Status: INACTIVE<br>To: 3/31/2011 |


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| RV Supply Center, Inc | 1, 4 | 10609933 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8893 Three Flags Ave Ste B | Oak Hills | 92344 |

**DETAILS**

General Program & Facility Information
CERS ID: 10609933
Facility ID: FA0016222
Facility Regulator Key ID: FA0016222
Organization Code: 90574786
Business/Organization Name: RV Supply Center, Inc
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 4
Facility Count for Business: 1
Last Submittal Date (any element): 4/16/2018 4:27:39 PM
Count of Submitted Elements: 20
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: 760-949-1222
Property Owner Phone Number: 760-949-1222
Property Owner Mailing Address: 8893 Three Flags Ave Ste B
Property Owner Mailing City: Oak Hills
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92344
Property Owner Mailing Country: United States

More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| RV Supply Center, Inc | 1, 4 | 277513 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8893 THREE FLAGS AVE STE B | OAK HILLS | 92344 |

**DETAILS**

Site Regulated Program Information
Site ID: 277513
Site EI ID: 10609933
Agency Provided Latitude: 34.36946
Agency Provided Longitude: -117.42963

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 4/4/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 4/4/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department

More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| RV Supply Center, Inc | 1, 4 | FA0016222-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8893 Three Flags Ave Ste B | Oak Hills | 92344 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino County Fire Department
Facility ID: FA0016222
Address2: Not Reported
Owner Information: Mark Boesch
Contact Name: Not Reported
Mailing Address: 8893 Three Flags Ave Ste B, Oak Hills, CA 92344
Mailing Address 2: Not Reported
Agency Provided Latitude: Not Reported
Agency Provided Longitude: Not Reported
Permit ID: PT0036888
Program Element Code: 4243
Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS
Status: ACTIVE
To: 5/31/2019

Permit ID: PT0036889
Program Element Code: 4453
Permit Description: SMALL QUANTITY GENERATOR
Status: ACTIVE
To: 5/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.12 miles SW | 3643 ft | 10 |

| SITE NAME | MAPS | ID |
|---|---|---|
| WINGFOOT COMMERCIAL TIRE SYSTS | 1, 4 | 16670 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8893 THREE FLAGS AVE | Hesperia | 92344 |


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| DETAILS |
|---|
| Sic Code: 5531<br>Desc: Auto, Truck & Tire Service<br>Site Added: 2/2010 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.12 miles SW | 3643 ft | 10 |
| **SITE NAME** | | | **MAPS** | **ID** |
| RV SUPPY CENTER INC | | | 1, 4 | CAL000307361 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8893 THREE FLAGS AVE STE B | | | OAK HILLS | 92344 |

**DETAILS**

Additional details may be found online using the following link:

https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000307361
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: RECREATIONAL VEHICLE DEALERS
Active Site Indicator: H----
Owner Name: RV SUPPLY CENTER INC
Operator Name: MARK BOESCH
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20060526
Acknowledge Flag Date: 20060526
Contact First Name: MARK
Contact Last Name: BOESCH
Contact Street 1: 8893 THREE FLAGS AVE STE B
Contact City: OAK HILLS
Contact State: CA
Contact Zip: 92344
Contact Phone: 760-949-1222
Contact FAX: 000-000-0000
Contact E-mail Address: MARK@RVSCINC.COM
Universal Waste Destination Facility: Y

More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | 10049065 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

**DETAILS**

General Program & Facility Information
CERS ID: 10049065
Facility ID: FA0008746
Facility Regulator Key ID: FA0008746
Organization Code: 90044872
Business/Organization Name: DOUBLE EAGLE TRANSPORTATION
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 3
Facility Count for Business: 1
Last Submittal Date (any element): 12/5/2018 4:02:03 PM
Count of Submitted Elements: 77
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): 3.06459116e+012
Number of Employees: 133
Property Owner Name: Gerald Butcher
Property Owner Phone Number: (760) 956-3770
Property Owner Mailing Address: 12135 Scarbrough Court
Property Owner Mailing City: Hesperia
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 92344
Property Owner Mailing Country: United States
More Details Link


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-UST-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | FA0008746-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |

**DETAILS**

County: San Bernardino
Responsible Agency: San Bernardino Division of Environmental Health Services
Facility ID: FA0008746
Address2: Not Reported
Owner Info: Double Eagle Transportation Inc.
Contact Name: GERALD BUTCHER
Mailing Address: 12135 Scarbrough Court, Hesperia, CA 92345
Mailing Address2: Not Reported
Permit ID: PT0016928
Program Element Code: 4104
Permit Description: REGULAR UST ANNUAL INSPECTION (PER TANK)
Status: ACTIVE
To: 8/31/2019

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | 391724 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |


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| DETAILS |
|---|

Site Regulated Program Information
Site ID: 391724
Site EI ID: 10049065
Agency Provided Latitude: 34.41259
Agency Provided Longitude: -117.39805

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Program Description: Underground Storage Tank

Evaluation Information
Evaluation Date: 8/28/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: San Bernardino County Fire Department
Evaluation Program: UST
Evaluation Source: CERS

Evaluation Date: 8/22/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency

More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | FA0008746-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0008746<br>Address2: Not Reported<br>Owner Information: Double Eagle Transportation Inc.<br>Contact Name: GERALD BUTCHER<br>Mailing Address: 12135 Scarbrough Court, Hesperia, CA 92345<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0016926<br>Program Element Code: 4454<br>Permit Description: LARGE QUANTITY GENERATOR<br>Status: ACTIVE<br>To: 8/31/2019<br><br>Permit ID: PT0016927<br>Program Element Code: 4243<br>Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS<br>Status: ACTIVE<br>To: 8/31/2019<br><br>Permit ID: PT0016928<br>Program Element Code: 4104<br>Permit Description: REGULAR UST ANNUAL INSPECTION (PER TANK)<br>Status: ACTIVE<br>To: 8/31/2019<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| DryCleaners-CA | Listed | 0.19 miles SW | 3645 ft | 11 |
| **SITE NAME** | | | **MAPS** | **ID** |
| DOUBLE EAGLE TRANSPORTATION | | | 1, 4 | CAL000225630 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12135 SCARBOROUGH CT | | | HESPERIA | 923450000 |


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| DETAILS |
|---|

EPA ID: CAL000225630
Create Date: 12/18/2001
Facility Act Ind: y
Inact Date: Not Reported
Facility Street2: Not Reported
County: San Bernardino
Latitude: 0
Longitude: 0
Mailing Name: Not Reported
Facility Mailing Address: 12135 SCARBROUGH CT
Facility Mailing Address 2: Not Reported
Facility Mailing City: OAK HILLS
Facility Mailing State: CA
Facility Mailing Zip Code: 923449200
Region Code: 4
Owner Name: JERRY BUTCHER
Owner Address: 12135 SCARBROUGH CT
Owner Address2: Not Reported
Owner City: OAK HILLS
Owner State: CA
Owner Zip Code: 923449200
Owner Phone Number: 7609563770
Owner Fax Number: 7609566362
Contact Name: TONY MCKINNEY
Contact Address: 12135 SCARBROUGH COURT
Contact Address2: Not Reported
Contact City: HESPERIA
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | CAL000225630 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBOROUGH CT | HESPERIA | 92345 |


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| DETAILS |
|---|

Additional details may be found online using the following link:

https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000225630
Source Type: Implementer
Generator Status: Non-Generator
NAICS1: GENERAL FREIGHT TRUCKING
Active Site Indicator: H----
Owner Name: JERRY BUTCHER
Operator Name: TONY MCKINNEY
In Handler Universes: Y
In a Universe: Y
Universal Waste: Y
Universal Waste Destination Facility: Y

Receive Date: 20011218
Acknowledge Flag Date: 20011218
Contact First Name: TONY
Contact Last Name: MCKINNEY
Contact Street 1: 12135 SCARBROUGH COURT
Contact City: HESPERIA
Contact State: CA
Contact Zip: 92344
Contact Phone: 760-956-3770
Contact FAX: 760-956-6362
Contact E-mail Address: SAFETYDIRECTOR@DOUBLEEAGLETRANS.COM
Universal Waste Destination Facility: Y

More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| UST-CA | Listed | 0.19 miles SW | 3645 ft | 11 |

| SITE NAME | MAPS | ID |
|---|---|---|
| DOUBLE EAGLE TRANSPORTATION | 1, 4 | 243095 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12135 SCARBROUGH CT | HESPERIA | 92345 |


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| DETAILS |
|---|
| More Information on Site? Go to Following Link:<br>http://geotracker.waterboards.ca.gov/search.asp<br>CERSID: 10049065<br>Global ID: FA0008746<br>COUNTY: San Bernardino<br>Permitting Agency: San Bernardino County Fire Department<br>Agency Provided Latitude: 34.41259<br>Agency Provided Longitude: -117.398056<br>PROJECT TYPE: Not Reported<br>RB Case Number: Not Reported<br>LOC Case Number: Not Reported<br>Case Worker: Not Reported<br>MTBE DATE: Not Reported<br>GW CONC (PPB): Not Reported<br>MATRIX: Not Reported |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| UST-CRSP-CA | Listed | 0.19 miles SW | 3645 ft | 11 |
| **SITE NAME** | | | **MAPS** | **ID** |
| DOUBLE EAGLE TRANSPORTATION | | | 1, 4 | 391724 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 12135 SCARBROUGH CT | | | HESPERIA | 92345 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 391724<br>EI ID: 10049065<br>Agency Provided Address: 12135 SCARBROUGH CT<br>Agency Provided Latitude: 34.41259<br><br>Agency Provided Longitude: -117.39805<br>Program Description: Underground Storage Tank<br><br>Evaluation Information (2017 to present)<br>Evaluation Date: 11/9/2021<br>Violations Found? (Y/N): No<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HMRRP<br>Evaluation Source: CERS<br><br>Evaluation Date: 11/9/2021<br>Violations Found? (Y/N): No<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HW<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| AST-CRSP-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1, 4 | 11970 |
| **ADDRESS** | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE STE C | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 11970<br>EI ID: 10402582<br>Agency Provided Address: 8853 THREE FLAGS AVE STE C<br>Agency Provided Latitude: 34.41111<br><br>Agency Provided Longitude: -117.39383<br>Program Description: Aboveground Petroleum Storage<br><br>Evaluation Information (2017 to present)<br>Evaluation Date: 11/4/2021<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HMRRP<br>Evaluation Source: CERS<br><br>Evaluation Date: 11/4/2021<br>Violations Found? (Y/N): No<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s):<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: HW<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CERS-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1, 4 | 10402582 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 Three Flags Ave Ste C | Hesperia | 92344 |


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| DETAILS |
|---|

General Program & Facility Information
CERS ID: 10402582
Facility ID: FA0014891
Facility Regulator Key ID: FA0014891
Organization Code: 90364402
Business/Organization Name: BEST LUBE TRUCK SERVICE & REPAIRS LLC
Multiple Jurisdictional Business? (Y/N): No
Business Origin: Business
Count of Business CERS User Accounts: 1
Facility Count for Business: 1
Last Submittal Date (any element): 3/1/2018 7:42:32 PM
Count of Submitted Elements: 15
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 5
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| County-AST-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1, 4 | FA0014891-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 THREE FLAGS AVE UNIT C | Hesperia | 92344 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino Division of Environmental Health Services<br>Facility ID: FA0014891<br>Address2: Not Reported<br>Owner Information: Francisco Jimenez<br>Contact Name: FRANCISCO JIMENEZ<br>Mailing Address: 8853 Three Flags Ave Ste C, Hesperia, CA 92344<br>Mailing Address2: Not Reported<br>Permit ID: PT0031853<br>Program Element Code: 4031<br>Permit Description: APSA 1,320-10,000 GAL FAC CAPACITY<br>Status: ACTIVE<br>To: 2/28/2019 |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CRSP-CA | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | | | 1, 4 | 11970 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE STE C | | | HESPERIA | 92344 |


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| DETAILS |
|---|
| Site Regulated Program Information<br>Site ID: 11970<br>Site EI ID: 10402582<br>Agency Provided Latitude: 34.41111<br>Agency Provided Longitude: -117.39383<br><br>Program Description: Aboveground Petroleum Storage<br><br>Program Description: Chemical Storage Facilities<br><br>Program Description: Hazardous Waste Generator<br><br>Program Description: RCRA LQ HW Generator<br><br>Evaluation Information<br>Evaluation Date: 1/25/2016<br>Violations Found? (Y/N): Yes<br>Evaluation General Type: Compliance Evaluation Inspection<br>Evaluation Type: Routine done by local agency<br>Evaluation Note(s): INSPECTION OF BEST LUBE TRUCK SERVICE & REPAIRS LLC IN HESPERIA.<br>Evaluation Division: San Bernardino County Fire Department<br>Evaluation Program: APSA<br>Evaluation Source: CERS<br><br>Evaluation Date: 1/25/2016<br>Violations Found? (Y/N): Yes<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| CUPA-CA | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | 1, 4 | FA0014891-SBD |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 THREE FLAGS AVE UNIT C | Hesperia | 92344 |


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| DETAILS |
|---|
| County: San Bernardino<br>Responsible Agency: San Bernardino County Fire Department<br>Facility ID: FA0014891<br>Address2: Not Reported<br>Owner Information: Francisco Jimenez<br>Contact Name: FRANCISCO JIMENEZ<br>Mailing Address: 8853 Three Flags Ave Ste C, Hesperia, CA 92344<br>Mailing Address 2: Not Reported<br>Agency Provided Latitude: Not Reported<br>Agency Provided Longitude: Not Reported<br>Permit ID: PT0025928<br>Program Element Code: 4243<br>Permit Description: HAZARDOUS MATERIALS 4-10 CHEMICALS<br>Status: ACTIVE<br>To: 2/28/2020<br><br>Permit ID: PT0025929<br>Program Element Code: 4454<br>Permit Description: LARGE QUANTITY GENERATOR<br>Status: ACTIVE<br>To: 2/28/2020<br><br>Permit ID: PT0031853<br>Program Element Code: 4031<br>Permit Description: APSA 1,320-10,000 GAL FAC CAPACITY<br>Status: ACTIVE<br>To: 2/28/2020<br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.21 miles S | 3649 ft | 12 |

| SITE NAME | MAPS | ID |
|---|---|---|
| CAJON TIRE SVC | 1, 4 | 17338 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8853 THREE FLAGS AVE B | Hesperia | 92344 |

| DETAILS |
|---|
| Sic Code: 5531<br>Desc: Auto, Truck & Tire Service<br>Site Added: 2/2010 |


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| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| Hist-Auto Repair | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| WEST COAST TIRES & TRUCK RPR | | | 1, 4 | 23876 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE B | | | Hesperia | 92344 |
| **DETAILS** | | | | |
| Sic Code: 5531<br>Desc: Auto, Truck & Tire Service<br>Site Added: 2/2010 | | | | |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| RCRA-NON-US | Listed | 0.21 miles S | 3649 ft | 12 |
| **SITE NAME** | | | **MAPS** | **ID** |
| BEST LUBE TRUCK SERVICE & REPAIRS LLC | | | 1, 4 | CAL000372624 |
| **ADDRESS** | | | **CITY** | **ZIP** |
| 8853 THREE FLAGS AVE UNIT C | | | HESPERIA | 92345 |


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| DETAILS |
|---|
| Additional details may be found online using the following link:<br><br>https://enviro.epa.gov/enviro/rcrainfoquery_3.facility_information?pgm_sys_id=CAL000372624<br>Source Type: Implementer<br>Generator Status: Non-Generator<br>NAICS1: GENERAL AUTOMOTIVE REPAIR<br>Active Site Indicator: H----<br>Owner Name: FRANCISCO A JIMENEZ<br>Operator Name: ANGELICA N JIMENEZ<br>In Handler Universes: Y<br>In a Universe: Y<br>Universal Waste: Y<br>Universal Waste Destination Facility: Y<br><br>Receive Date: 20120313<br>Acknowledge Flag Date: 20120313<br>Contact First Name: ANGELICA<br>Contact Last Name: N JIMENEZ<br>Contact Street 1: 37123 CALLE REAL ST<br>Contact City: PALMDALE<br>Contact State: CA<br>Contact Zip: 93550<br>Contact Phone: 661-400-4753<br>Contact FAX: 760-244-8599<br>Contact E-mail Address: BESTLUBESERVICE@HOTMAIL.COM<br>Universal Waste Destination Facility: Y<br><br>More Details Link |

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| School-Other-CA | NO ACTION REQUIRED | 0.48 miles SE | 3598 ft | **13** |

| SITE NAME | MAPS | ID |
|---|---|---|
| NEW MESQUITE TRAILS WEST ELEMENTARY SCHOOL | 1, 4 | 70000125 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 12850 MUSCATEL STREET | HESPERIA | 92345 |


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| DETAILS |
|---|

URL:
http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=70000125
Envirostor ID: 70000125
Agency Provided Address: 12850 MUSCATEL STREET
County: SAN BERNARDINO
Site Type: SCHOOL INVESTIGATION
Site Type Detailed: SCHOOL
Acres: 7
Assessor's Parcel Number: 3064-631-07
National Priorities List: NO
Lead Agency: SMBRP
Project Manager: Not Reported
Supervisor: SHAHIR HADDAD
Division Branch: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Site Code: 404669
Assembly: 33
Senate: 21
Congressional District: 8
Special Program: Not Reported
Status: NO ACTION REQUIRED
Status Date: 11/16/2005
Past Uses: NONE
Restricted Use: NO
Funding: SCHOOL DISTRICT
Regulatory Agencies Involved: SMBRP
Potential Contamination of Concern: NONE SPECIFIED,31000
Confirmed Contamination of Concern: NONE SPECIFIED
More Details Link

| DATABASE | STATUS | DISTANCE | ELEVATION | MAP ID |
|---|---|---|---|---|
| LUST-Closed-CA | COMPLETED - CASE CLOSED | 0.5 miles SW | 3678 ft | **14** |

| SITE NAME | MAPS | ID |
|---|---|---|
| PILOT #381 | 1, 4 | T0607144072 |

| ADDRESS | CITY | ZIP |
|---|---|---|
| 8701 HIGHWAY 395 | HESPERIA | 92345 |


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## DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607144072
Global ID: T0607144072
Case Type: LUST CLEANUP SITE
Status: COMPLETED - CASE CLOSED
Agency Provided Address: 8701 HIGHWAY 395
Status Date: 3/18/2009
Cleanup Fund Case: NO
Lead Agency: SAN BERNARDINO COUNTY
Case Worker: JC
Local Agency: SAN BERNARDINO COUNTY
Resolution Case Number: 6B3601044T
Location Case Number: T06071
File Location: Not Reported
Potential Contaminants of Concern: DIESEL
Potential Media Affected: UNDER INVESTIGATION
Site History: Not Reported
Begin Date: 6/11/2007
How Discovered: OTHER MEANS
How Discovered Description: LEAK IN PRODUCT LINES OBSERVED WHEN PRESSURIZED FOR TESTING. THERE WAS NO LEAKING OBSERVED DURING NORMAL OPERATIONS. A LEAK IN AND IN-LINE VALVE IN A SUMP WAS OBSERVED. PILOT HAS ORDERED PARTS FOR REPAIR.
Stop Method: OTHER MEANS
Stop Method Description: Not Reported
Agency Provided Latitude: 34.4099215
Agency Provided Longitude: -117.3991492

More Details Link


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# RECORDS SOURCES SEARCHED

| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Air-CA | Air Permits with Emissions | ERS Supplemental Govt Sources | Click Here | None Found |
| AIR-DIST-CA | Air Pollution Control District | ERS Supplemental Govt Sources | Click Here | 2 |
| AST-CA | Historical Aboveground Storage Tanks | State/Tribal UST | Click Here | None Found |
| AST-CRSP-CA | Aboveground Storage Tanks | State/Tribal UST | Click Here | 2 |
| BF-MOA-CA | Brownfield MOA Sites (aka Considered Brownfield Sites, SWRCB MOA, Brownfield Memorandum of Agreement) | State/Tribal Brownfield | Click Here | None Found |
| BF-Tribal-US | Historical Tribal Brownfields | Federal Brownfield | Click Here | None Found |
| BF-US | Brownfields Sites | Federal Brownfields | Click Here | None Found |
| BioFuel-US | Bio Diesel Fuel | ERS Supplemental Govt Sources | Click Here | None Found |
| BZ-HazWaste-CA | Border Zone or Hazardous Waste Property | State/Tribal ASTM Other Med | Click Here | None Found |
| CAF-CA | Confined Animal Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| CDL-CA | Clandestine Drug Labs | ERS Supplemental Govt Sources | Click Here | None Found |
| CDL-US | National Clandestine Drug Lab Register | ERS Supplemental Govt Sources | Click Here | None Found |
| CERCLIS-Archived-US | CERCLIS sites that have been archived | Federal CERCLIS NFRAP | Click Here | None Found |
| CERCLIS-US | Comprehensive Environmental Response, Compensation, and Liability Information System | Federal CERCLIS | Click Here | None Found |
| CERS-CA | California Environmental Reporting System (CERS) | State/Tribal ASTM Other Med | Click Here | 9 |
| CHMIRS-CA | California Hazardous Material Incident Report System | Emergency Release Reports | Click Here | None Found |
| CHWF-CA | Commercial Offsite Hazardous Waste Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| City-AST-CA | Underground Storage Tanks | State/Tribal UST | Click Here | None Found |
| City-CUPA-CA | Certified Unified Program Agency | State/Tribal ASTM Other Med | Click Here | None Found |
| City-Others-CA | Hazardous Material Facilities | State/Tribal ASTM Other Med | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| City-UST-CA | City Agency Underground Storage Tanks | State/Tribal UST | Click Here | None Found |
| Cleaners-CA | Cleaners | ERS Supplemental Govt Sources | Click Here | None Found |
| Coal-Ash-Dams-US | Coal Ash Contaminated Sites and Hazard Dams | ERS Supplemental Govt Sources | Click Here | None Found |
| Controls-CA | California sites with Deed Restrictions or other Controls | State/Tribal Inst/Eng Controls | Click Here | None Found |
| Controls-RCRA-US | RCRA Institutional and Engineering Controls Summary (aka Federal RCRA with Controls) | Federal Institutional/Engineering Controls | Click Here | None Found |
| Controls-US | US CERCLA Sites with Controls (aka US IC/EC, Institutional/Engineering List Controls, Land Use Controls) | Federal Institutional/Engineering Controls | Click Here | None Found |
| CorAct-Closed-CA | Corrective Action Sites | State/Tribal ASTM Other Low | Click Here | None Found |
| CorAct-Open-CA | Corrective Action Sites | State/Tribal ASTM Other High | Click Here | None Found |
| CorAct-Other-CA | Corrective Action Sites | State/Tribal ASTM Other Low | Click Here | None Found |
| CORTESE-CA | Cortese Hazardous Waste & Substances Sites List | State/Tribal ASTM Other Med | Click Here | None Found |
| County-AST-CA | Aboveground Storage Tanks | State/Tribal UST | Click Here | 2 |
| County-BI-CA | Business Inventory | ERS Supplemental Govt Sources | Click Here | None Found |
| County-Hist-CA | Historic Environmental County Listings | State/Tribal ASTM Other Med | Click Here | None Found |
| County-LUST-CA | County Agency Leaking Underground Storage Tanks | State/Tribal LUST | Click Here | None Found |
| County-LUST-Closed-CA | County Agency Leaking Underground Storage Tanks, Closed Cases | State/Tribal LUST | Click Here | None Found |
| County-LUST-Open-CA | County Agency Leaking Underground Storage Tanks, Open Cases | State/Tribal LUST | Click Here | None Found |
| County-Others-CA | Environmental Related Databases | State/Tribal ASTM Other Med | Click Here | None Found |
| County-SLIC-Closed-CA | County SLIC Sites | Emergency Release Reports | Click Here | None Found |
| County-SLIC-Open-CA | County SLIC Sites | Emergency Release Reports | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| County-SML-CA | County Site Mitigation Unit List | State/Tribal ASTM Other Med | Click Here | None Found |
| County-SWF-CA | County Solid Waste Facilities | State/Tribal Landfill/Solid Waste | Click Here | None Found |
| County-UST-CA | County Agency Underground Storage Tanks | State/Tribal UST | Click Here | 1 |
| CRSP-CA | Cal EPA Regulated Site Portal | State/Tribal ASTM Other Med | Click Here | 8 |
| CUPA-CA | Certified Unified Program Agency | State/Tribal ASTM Other Med | Click Here | 12 |
| Dams-CA | California Dams | ERS Supplemental Govt Sources | Click Here | None Found |
| Debris-US | Historical Debris Sites | Federal Solid Waste | Click Here | None Found |
| Deed-CA | Deed Restrictions/Land Use Restrictions | State/Tribal Inst/Eng Controls | Click Here | None Found |
| Delisted-NPL-US | Delisted NPL Sites | Federal Delisted NPL | Click Here | None Found |
| DPR-CA | Pesticide Regulation Licenses | ERS Supplemental Govt Sources | Click Here | None Found |
| DryCleaners-CA | Dry Cleaner Facilities | ERS Supplemental Govt Sources | Click Here | 1 |
| EGRID-US | Emissions & Generation Resource Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| ENF-CA | Enforcement Actions Data | State/Tribal ASTM Other Med | Click Here | None Found |
| ENF-SMARTS-CA | Storm Water Enforcement Actions | State/Tribal ASTM Other Med | Click Here | None Found |
| ENF-Wastewater-CA | Wastewater Enforcement Actions | State/Tribal ASTM Other Med | Click Here | None Found |
| EPA-Watch-List-US | Historical EPA Watch List | ERS Supplemental Govt Sources | Click Here | None Found |
| ERNS-US | Emergency Response Notification System | Federal ERNS | Click Here | None Found |
| Eval-Hist-Active-CA | EnviroStor Evaluation History Sites | State/Tribal ASTM Other | Click Here | None Found |
| Eval-Hist-NFA-CA | EnviroStor Database Evaluation History NFA Sites | State/Tribal ASTM Other | Click Here | None Found |
| Eval-Hist-Other-CA | EnviroStor Database Evaluation History NFA Sites | State/Tribal ASTM Other | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| FA-HW-CA | Financial Assurance, Hazardous Waste | ERS Supplemental Govt Sources | Click Here | None Found |
| FA-HW-US | Financial Assurance, Hazardous Waste | ERS Supplemental Govt Sources | Click Here | None Found |
| FA-SWF-CA | Financial Assurance, Solid Waste Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| FEMA-UST-US | Historical FEMA Underground Storage Tanks | Federal UST | Click Here | None Found |
| FRS-US | Facility Registry Index (FINDS) | ERS Supplemental Govt Sources | Click Here | 4 |
| FTTS-ENF-US | Historical FIFRA/TSCA Tracking System (FTTS) Enforcement Actions | Federal ASTM Other | Click Here | None Found |
| FTTS-INSP-US | Historical FIFRA/TSCA Tracking System (FTTS) Inspections | ERS Supplemental Govt Sources | Click Here | None Found |
| FUDS-US | Formerly Used Defense Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| FUSRAP-US | Formerly Utilized Sites Remedial Action Program Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Haulers-CA | Registered Waste Tire Haulers Listing | ERS Supplemental Govt Sources | Click Here | None Found |
| HazWaste-CA | Hazardous Waste Facilities | State/Tribal ASTM Other Med | Click Here | None Found |
| Hist-AFS2-US | Historical Air Facility System for Clean Air Act stationary sources | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-AFS-US | Historical Air Facility System for Clean Air Act stationary sources | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Agriculture | Historical Ranches/Farms, Livestock/Agriculture | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-AST-CA | Historical Aboveground Storage Tanks | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Auto Dealers | Historical Auto and Truck Dealers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Auto Repair | Historical Automotive Repair | ERS Exclusive Historic Sources | Click Here | 3 |
| Hist-AWS-CA | Historical Annual Workplan Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-CA | Previously Listed California Sites | ERS Supplemental Govt Sources | Click Here | 6 |
| Hist-CalFID-CA | Historical Facility Inventory Database | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-CALSITES-CA | Historical Calsites Database | ERS Supplemental Govt Sources | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Hist-CERCLIS-NFRAP-US | Historical CERCLIS-NFRAP | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-CERCLIS-US | Historical CERCLIS Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Chemical Manufacturing | Historical Manufacturing and Distribution of Chemicals, Gases, and/or Solids | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Chemical-Storage | Historical Chemical/Hazardous Use Storage | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-City-UST-CA | Historical Underground Storage Tanks | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Cleaners | Historical Laundry, Cleaners, and Dry Cleaning Services | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Controls-CA | Historical Restricted Use Sites | State/Tribal Inst/Eng Controls | Click Here | None Found |
| Hist-Convenience | Historical Convenience Store with Possible Gas | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Cort-CA | Historical Cortese list | State/Tribal ASTM Other Med | Click Here | None Found |
| Hist-Deed-CA | Historical Deed Restriction Properties | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Disposal-Recycle | Historical Hazardous Disposal/Recycle and Dumps/Waste | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-DTG-CA | Depth to Groundwater | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Dumps-US | Historical Dumps Inventory of 1985 | Federal Solid Waste | Click Here | None Found |
| Hist-ERNS-US | Historical Emergency Response Notification System (ERNS) | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-FIFRA-US | Historical Case Administration Data from National Compliance Database (Federal Insecticide, Fungicide, and Rodenticide Act) | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-FINDS-US | Historical Facility Index System | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Food-Processors | Historical Food Processing Manufacturers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Gun-Ranges | Historical Gun Ranges/Clubs | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-HWS-CA | Historical Cortese List-Hazardous Waste Substance Site List | ERS Supplemental Govt Sources | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Hist-LUSTIS-CA | Historical Lust Information System (LUSTIS) | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Machine Shop | Historical Machine Shops, Welding, Machine Repair | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Manufacturing | Historical Sources US: Manufacturing | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Metal Plating | Historical Metal Plating | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Mining | Historical Mining Operations | ERS Exclusive Historic Sources | Click Here | None Found |
| HIST-MLTS-US | Historical Material Licensing Tracking System | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Mortuaries | Historical Crematories/Mortuaries | ERS Exclusive Historic Sources | Click Here | None Found |
| HIST-MTBE-CA | Historical Sites With MTBE (Methyl Tertiary-Butyl Ether) Contamination | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-NPL-US | Historical National Priority List | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Oil-Gas | Historical Oil and Gas Well Related Facilities | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-OilGas-Refiners | Historical Oil/Gas Refiners/Manufacturers/Plants | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Orange-County-LF-CA | Historical Orange County Landfills | ERS Supplemental Govt Sources | Click Here | None Found |
| Historical-CA | Historical Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Other | Historical Environmental Facilities | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Paint-Stores | Historical Paint Stores | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Petroleum | Historical Petroleum Refining/ Manufacturing/ Chemicals | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Post-Offices | Historical Post Offices | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Printers | Historical Printers and Publishers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Prop65-CA | Historical Prop 65 Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| HIST-R4-CA | Historical sites | State/Tribal ASTM Other Med | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Hist-RCRIS-US | Historical EPA's Resource Conservation and Recovery Act | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-LUST-CA | Historical Leaking Underground Storage Tanks | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-Other-CA | Historical Toxic Lists, Site Mitigation, and Groundwater Cleanup Program | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-SLIC-CA | Historical Spills and Leak Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-Spills-CA | Historical Industrial Cleanup Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-SWLF-CA | Historical County Landfills and Transfer Stations | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Regional-UST-CA | Historical Underground Storage Tanks | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Rental | Historical Rental Equipment & Yards | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-RV-Dealers | Historical Trailer and Recreational Vehicle Dealers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Salvage | Historical Vehicle Salvage Yards or Wreckers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-SCL-CA | Historical California Cerclis Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Service Stations | Historical Service Stations/Vehicle Fueling | ERS Exclusive Historic Sources | Click Here | None Found |
| HIST-SLIC-CV-CLOSED-CA | Historical Central Valley Spills and Leak Sites | Emergency Release Reports | Click Here | None Found |
| HIST-SLIC-CV-OPEN-CA | Historical Central Valley Spills and Leak Sites | Emergency Release Reports | Click Here | None Found |
| Hist-Steel-Metals | Historical Steel Mills/Manufacturers/Foundries/Smelters | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-SWIS-CA | Historical Solid Waste Information System (SWIS) | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Textile | Historical Textile Mills/Manufacturers | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-ToxicPits-CA | Historical Toxic Pits Cleanup Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Transportation | Historical Transportation Facilities | ERS Exclusive Historic Sources | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Hist-TRIS-US | Historical Toxic Release Inventory System | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Trucking | Historical Trucking, Shipping, Delivery, and/or Storage | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-US | Historical Previously Listed Federal Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-US-EC | Historical Engineering Controls Sites (aka US EC, Engineering Controls, Land Use Controls) | Federal Institutional/Engineering Controls | Click Here | None Found |
| Hist-USGS-WaterWells-CA | Historical Ground Water Site Inventory for California | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-US-IC | Historical Sites with Institutional Controls (aka US IC, Institutional Controls, Land Use Controls) | Federal Institutional/Engineering Controls | Click Here | None Found |
| Hist-UST-CA | Historical Hazardous Substance Storage Infirmation (aka Historical Underground Storage Tanks) | State/Tribal UST | Click Here | None Found |
| Hist-UST-Cleanup-CA | Historic UST Cases Recommended for Closure under UST Cleanup Fund 5 Year Review (aka UST Cleanup Fund Cases) | State/Tribal LUST | Click Here | None Found |
| Hist-USTReg-CA | Historical Underground Storage Tank Registrations Database | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-Vehicle-Parts | Historical Vehicle Parts | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-Vehicle-Washing | Historical Vehicle/Truck Washing Facilities | ERS Exclusive Historic Sources | Click Here | None Found |
| Hist-WaterWells-US | Historical Public Community Water Supply/Well Head Protection Database | ERS Supplemental Govt Sources | Click Here | None Found |
| Hist-WIP-Active-CA | Historical Well Investigation Program Case List, Active Sites (aka WIP) | State/Tribal ASTM Other Med | Click Here | None Found |
| Hist-WIP-Backlog-CA | Historical Well Investigation Program Case List, Backlog Sites (aka WIP) | State/Tribal ASTM Other Med | Click Here | None Found |
| Hist-WIP-Historical-CA | Historical Well Investigation Program Case List, Historical Sites (aka WIP) | State/Tribal ASTM Other Low | Click Here | None Found |
| Hist-WMUDS-CA | Historical Waste Management Unit Database System | ERS Supplemental Govt Sources | Click Here | None Found |
| HMIS-US | Hazardous Materials Information System | Federal Emergency Release Reports | Click Here | None Found |
| HWIS-CA | Hazardous Waste Information Summary | State/Tribal RCRA Equivalent | Click Here | 2 |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| HWMP-Controls-CA | Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction | State/Tribal Inst/Eng Controls | Click Here | None Found |
| HWT-CA | Hazardous Waste Transporters | ERS Supplemental Govt Sources | Click Here | None Found |
| ICE-CA | Inspection, Compliance, and Enforcement | State/Tribal ASTM Other Med | Click Here | None Found |
| ICIS-Air-US | Integrated Compliance Information System for Air | ERS Supplemental Govt Sources | Click Here | None Found |
| ICIS-FEC-US | Integrated Compliance Information System for Federal Enforcement Data | ERS Supplemental Govt Sources | Click Here | None Found |
| ICIS-NPDES-US | National Pollutant Discharge Elimination System (NPDES) | ERS Supplemental Govt Sources | Click Here | None Found |
| LA-LF-CA | Los Angeles County Landfills | State/Tribal Solid Waste | Click Here | None Found |
| Land-Disposal-CA | Geotracker - Land Disposal Sites (aka Landfills, LDS) | State/Tribal Landfill/Solid Waste | Click Here | None Found |
| LA-Waste-Haulers-CA | Waste Haulers | ERS Supplemental Govt Sources | Click Here | None Found |
| Lead-Smelter-2-US | Historical Lead Smelter Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Lead-US | Lead Smelter Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| Liens-CA | Environmental Liens | State/Tribal Inst/Eng Controls | Click Here | None Found |
| LIENS-US | Superfund Liens | Federal Institutional/Engineering Controls | Click Here | None Found |
| LMOP-US | Landfill Methane Outreach Program | ERS Supplemental Govt Sources | Click Here | None Found |
| LUST-Closed-CA | Geotracker - Leaking Underground Storage Tanks, Closed Cases | State/Tribal LUST | Click Here | 1 |
| LUST-Open-CA | Geotracker - Leaking Underground Storage Tanks, Open Cases | State/Tribal LUST | Click Here | None Found |
| Manifest2-RI | Hazardous Waste Manifest | State/Tribal RCRA Equivalent | Click Here | None Found |
| MethaneLF-CA | Methane Producing Landfills | State/Tribal Other | Click Here | None Found |
| Military-Active-CA | EnviroStor Database Military Active Sites (aka MCS) | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| Military-Bases-US | Military Base Boundaries | ERS Supplemental Govt Sources | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Military-NFA-CA | EnviroStor Database Military Active Sites (aka MCS) | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| Military-Other-CA | EnviroStor Database Military Active Sites (aka MCS) | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| Mines2-CA | California Mines | ERS Supplemental Govt Sources | Click Here | None Found |
| Mines-CA | Historical Death Valley Mines | ERS Supplemental Govt Sources | Click Here | None Found |
| Mines-CDMG-CA | California Division of Mines and Geology | ERS Supplemental Govt Sources | Click Here | None Found |
| MINES-US | Mines Master Index File | ERS Supplemental Govt Sources | Click Here | None Found |
| MLTS-US | Material Licensing Tracking System | ERS Supplemental Govt Sources | Click Here | None Found |
| Mortgage-CA | Cal Mortgage Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| MRDS-US | Mineral Resources Data System (MRDS) | ERS Supplemental Govt Sources | Click Here | None Found |
| MWMP-CA | Medical Waste Management Program | ERS Supplemental Govt Sources | Click Here | None Found |
| NCI-CA | Non-Case Information | ERS Supplemental Govt Sources | Click Here | None Found |
| NEI-LF-CA | Historical NEI (National Emission Inventory) Landfill Point Sources | ERS Supplemental Govt Sources | Click Here | None Found |
| NPDES-CA | National Pollutant Discharge Elimination System | ERS Supplemental Govt Sources | Click Here | None Found |
| NPDES-SW-CA | Notice of Intent Data | ERS Supplemental Govt Sources | Click Here | None Found |
| NPL-R9-US | NPL Region 9 Site Boundaries | Federal NPL | Click Here | None Found |
| NPL-US | National Priorities List | Federal NPL | Click Here | None Found |
| OGM-CA | Oil and Gas Monitoring | ERS Supplemental Govt Sources | Click Here | None Found |
| OGW-CA | California Oil and Gas Wells | ERS Supplemental Govt Sources | Click Here | None Found |
| OSCF-CA | Orphan Site Cleanup Fund | ERS Supplemental Govt Sources | Click Here | None Found |
| PADS-US | PCB Registration Database System | Federal ASTM Other | Click Here | None Found |
| PCB-US | PCB Transformers | Federal ASTM Other | Click Here | None Found |
| PCS-US | Historical Permit Compliance System for Clean Water Act | ERS Supplemental Govt Sources | Click Here | None Found |
| Perch1-CA | Perchlorate Confirmed Contaminant Sites | ERS Supplemental Govt Sources | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Perch2-CA | Perchlorate Confirmed Contaminant Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| PR-MOA-CA | Polanco Redevelopment MOA Sites | State/Tribal ASTM Other Med | Click Here | None Found |
| Project-CA | Project - Multipurpose Site Type | ERS Supplemental Govt Sources | Click Here | None Found |
| Proposed-NPL-US | Proposed NPL Sites | Federal NPL | Click Here | None Found |
| RADINFO-US | Radiation Information Database | ERS Supplemental Govt Sources | Click Here | None Found |
| RCRA-CESQG-US | Resource Conservation and Recovery Act, Conditionally Exempt Small Quantity Generators (aka RCRA CESQG) | Federal RCRA Generators | Click Here | None Found |
| RCRA-COR-US | Resource Conservation and Recovery Act, - Corrective Actions (aka RCRA CORRACTS) | Federal RCRA CORRACTS | Click Here | None Found |
| RCRA-LQG-US | Resource Conservation and Recovery Act, Large Quantity Generators (aka RCRA LQG) | Federal RCRA Generators | Click Here | None Found |
| RCRA-NON-US | Resource Conservation and Recovery Act, Non-Hazardous Generators (aka RCRA Non-Haz, RCRA NonGen, RCRA No longer Regulated) | Federal RCRA Generators | Click Here | 6 |
| RCRA-SQG-US | Resource Conservation and Recovery Act, Small Quantity Generators (aka RCRA SQG) | Federal RCRA Generators | Click Here | None Found |
| RCRA-TSDF-US | Resource Conservation and Recovery Act -, Treatment, Storage, and Disposal Facilities (aka RCRA TSD, RCRA TSDF) | Federal RCRA non-CORRACTS TSD | Click Here | None Found |
| Response-CA | State Response Sites and National Priorities List (NPL) | State/Tribal NPL | Click Here | None Found |
| RFG-Lab-US | Reformulated Gasoline (RFG) | ERS Supplemental Govt Sources | Click Here | None Found |
| RMP-US | Risk Management Plans | ERS Supplemental Govt Sources | Click Here | None Found |
| ROD-US | Records of Decision | ERS Supplemental Govt Sources | Click Here | None Found |
| SAA-Agreements-US | Sites with Superfund Alternative Approach Agreements | Federal ASTM Other | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| School-Active-CA | EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH) | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| School-NFA-CA | EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH) | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| School-Other-CA | EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH) | State/Tribal Voluntary Cleanup Sites | Click Here | 1 |
| SDWIS-US | Safe Drinking Water Information System | ERS Supplemental Govt Sources | Click Here | None Found |
| SGV-Deep-Plumes-CA | San Gabriel Valley Deep Plumes | State/Tribal Solid Waste | Click Here | None Found |
| SGV-Shallow-Plumes-CA | San Gabriel Valley Shallow Plumes | State/Tribal Solid Waste | Click Here | None Found |
| SGV-Shallow-Plumes-Puente-Valley-CA | Puente Valley Shallow Plumes | State/Tribal Solid Waste | Click Here | None Found |
| SLIC-Closed-CA | Geotracker - The Spills, Leaks, Investigation & Cleanup (SLIC), Closed Cases | Emergency Release Reports | Click Here | None Found |
| SLIC-Open-CA | Geotracker -Spills, Leaks, Investigation & Cleanup (SLIC), Open Cases | Emergency Release Reports | Click Here | None Found |
| SML-CA | Site Mitigation List | State/Tribal ASTM Other Med | Click Here | None Found |
| SP-CA | Sampling Points | ERS Supplemental Govt Sources | Click Here | None Found |
| Spills-SSO-CA | Sanitary Sewer System | ERS Supplemental Govt Sources | Click Here | None Found |
| SSTS-US | Section 7 Tracking System | ERS Supplemental Govt Sources | Click Here | None Found |
| State-Response-Active-CA | EnviroStor State Response Active Sites | State/Tribal NPL | Click Here | None Found |
| State-Response-NFA-CA | EnviroStor State Response NFA Sites | State/Tribal NPL | Click Here | None Found |
| State-Response-Other-CA | EnviroStor State Response Other Sites | State/Tribal NPL | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Superfund-Active-CA | Envirorstor Superfund Active Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program) | State/Tribal CERCLIS Equivalent | Click Here | None Found |
| Superfund-NFA-CA | EnviroStor Superfund NFA Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program) | State/Tribal CERCLIS Equivalent | Click Here | None Found |
| Superfund-Other-CA | EnviroStor Superfund Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program) | State/Tribal CERCLIS Equivalent | Click Here | None Found |
| SWIS-CA | Solid Waste Information System | State/Tribal Landfill/Solid Waste | Click Here | None Found |
| SWLF-US | Solid Waste Facilities | Federal Solid Waste | Click Here | None Found |
| SWRCY-CA | Beverage Container Recycler Database | State/Tribal ASTM Other Med | Click Here | None Found |
| TierPer-CA | Tiered Permits | ERS Supplemental Govt Sources | Click Here | None Found |
| TOMS-CA | Topographically Occurring Mine Symbols | ERS Supplemental Govt Sources | Click Here | None Found |
| Tribal-Air-US | Tribal Air Permitted Facilities | ERS Supplemental Govt Sources | Click Here | None Found |
| Tribal-LUST-Closed-Reg4 | Tribal Leaking Underground Storage Tanks, Region 4, Closed Cases (aka Indian LUST) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Closed-Reg9 | Tribal Leaking Underground Storage Tanks, Region 9 (aka Indian Lust) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Open-Reg10 | Tribal Leaking Underground Storage Tanks (aka Indian LUST) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Open-Reg4 | Tribal Leaking Underground Storage Tanks, Region 4, Open Cases (aka Indian LUST) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Open-Reg9 | Tribal Leaking Underground Storage Tanks , Region 9 (aka Indian Lust) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Reg1 | Tribal Leaking Underground Storage Tanks (aka Indian LUST) | Federal LUST | Click Here | None Found |
| Tribal-LUST-Reg7 | Tribal Leaking Underground Storage Tanks, Region 7 (aka Indian LUST) | Federal LUST | Click Here | None Found |
| Tribal-ODI-US | Tribal Open Dump Sites | Federal Solid Waste | Click Here | None Found |
| Tribal-UST-Reg1 | Tribal Underground Storage Tanks (aka INDIAN UST) | Federal UST | Click Here | None Found |
| Tribal-UST-Reg10 | Tribal Underground Storage Tanks (aka Indian UST) | Federal UST | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Tribal-UST-Reg4 | Tribal Underground Storage Tanks (aka INDIAN UST) | Federal UST | Click Here | None Found |
| Tribal-UST-Reg7 | Tribal Underground Storage Tanks, Region 7 (aka UST) | Federal UST | Click Here | None Found |
| Tribal-UST-Reg9 | Tribal Underground Storage Tanks (aka Tribal UST) | Federal UST | Click Here | None Found |
| Tribal-VCP-US | Tribal VCP | Federal Tribal VCP | Click Here | None Found |
| TRIS2000-US | Historical Toxics Release Inventory System | ERS Supplemental Govt Sources | Click Here | None Found |
| TRIS2010-US | Toxics Release Inventory System | ERS Supplemental Govt Sources | Click Here | None Found |
| TRIS80-US | Historical Toxics Release Inventory System | ERS Supplemental Govt Sources | Click Here | None Found |
| TRIS90-US | Historical Toxics Release Inventory System | ERS Supplemental Govt Sources | Click Here | None Found |
| TSCA-US | Toxics Substance Control Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| UIC2-CA | Injection Wells | ERS Supplemental Govt Sources | Click Here | None Found |
| UIC-CA | Underground Injection Control Wells | ERS Supplemental Govt Sources | Click Here | None Found |
| UMTRA-US | Historical Uranium Mill Tailings Remedial Action Sites | ERS Supplemental Govt Sources | Click Here | None Found |
| USGS-Waterwells-US | Ground Water Site Inventory | ERS Supplemental Govt Sources | Click Here | None Found |
| UST-Abandoned-CA | Abandoned UST Initiative (aka Inventory of Abandoned Tank Sites) | State/Tribal UST | Click Here | None Found |
| UST-CA | Geotracker - Underground Storage Tanks | State/Tribal UST | Click Here | 1 |
| UST-Closed-CA | UST Case Closure Review Denials and Approved Orders (aka Closure of Underground Storage Tank (UST) Cases) | State/Tribal UST | Click Here | None Found |
| USTComp-CA | Previously Abandoned Tanks Now in Compliance (aka Compliance UST) | State/Tribal UST | Click Here | None Found |
| UST-CRSP-CA | Underground Storage Tanks | State/Tribal UST | Click Here | 1 |
| UST-Priority-CA | UST Cleanup Fund Priority List | State/Tribal UST | Click Here | None Found |
| UST-Proposed-CA | Proposed Closure of UST Cases (aka UST Proposed for Closure) | State/Tribal UST | Click Here | None Found |


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| ABREVIATION | DATABASE FULLNAME | DATABASE CATEGORY | DATABASE DETAILS LINK | TOTAL LISTINGS |
|---|---|---|---|---|
| Vapor-Intrusions-US | Vapor Intrusion Database | ERS Supplemental Govt Sources | Click Here | None Found |
| VCP-Active-CA | EnviroStor VCP Active Sites | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| VCP-NFA-CA | EnviroStor Database VCP NFA Listing | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| VCP-Other-CA | EnviroStor VCP Other Sites | State/Tribal Voluntary Cleanup Sites | Click Here | None Found |
| WDR-CA | Waste Discharge Requirements | ERS Supplemental Govt Sources | Click Here | None Found |


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# UN-MAPPABLE OCCURRENCES

The following occurrences were not mapped primarily due to incomplete or inaccurate address information. All of the following occurrences were determined to share the same zip code as the area searched. General status information is given with each occurrence along with any address information entered by the agency responsible for the list.

| ID | Facility Name | Address | Database | Status |
|---|---|---|---|---|
| No "un-mapped" sites requested. | | | | |


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# APPENDIX G

# PRELIMINARY WATER QUALITY MANAGEMENT PLAN

# City of Hesperia

# Preliminary Project Specific Water Quality Management Plan

For:

APN: 3064-591-12,13 & 631-01

Prepared for:

Cargo Solutions Express 14581 v

14587 Valley Blvd

Rancho Cucamonga, CA 92335

909-350-1644 ex 330

Prepared by:

Allard Engineering

16866 Seville Avenue

Fontana, CA 92335

909-356-1815

Preparation Date: **9-30-2023**

Revision No. and Date: #1: 8-8-2022, #2: 9-20-2022, **#3: 9-30-2023, #4 9-3-2024**

Final Approval Date:_____

# Project Owner's Certification

This Mojave River Watershed Water Quality Management Plan (WQMP) has been prepared for Bobby Kang, CEO-Cargo Solutions Express by Allard Engineering. The WQMP is intended to comply with the requirements of the City of Hesperia and the Phase II Small MS4 General Permit for the Mojave River Watershed. The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the Phase II Small MS4 Permit and the intent of San Bernardino County (unincorporated areas of Phelan, Oak Hills, Spring Valley Lake and Victorville) and the incorporated cities of Hesperia and Victorville and the Town of Apple Valley. Once the undersigned transfers its interest in the property, its successors in interest and the city/county/town shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and funding) of the WQMP have been accepted and that the plan will be transferred to future successors."

| Project Data | | | |
|---|---|---|---|
| Permit/Application Number(s): | | Grading Permit Number(s): | |
| Tract/Parcel Map Number(s): | | Building Permit Number(s): | |
| CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): | | | APN: 3064-591-12,13 & 631-01 |

| Owner's Signature | | | |
|---|---|---|---|
| **Owner Name: Bobby Kang** | | | |
| Title | CEO | | |
| Company | Cargo Solutions Express | | |
| Address | 14587 Valley Blvd, CA 92335 | | |
| Email | bobby@cargosolutionexpress.com | | |
| Telephone # | (909) 350-1644 ex 330 | | |
| Signature | | Date | |

# Preparer's Certification

| Project Data | | | |
|---|---|---|---|
| Permit/Application Number(s): | | Grading Permit Number(s): | |
| Tract/Parcel Map Number(s): | | Building Permit Number(s): | |
| CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): | | | APN: 3064-591-12,13 & 631-01 |

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of the California State Water Resources Control Board Order No. 2013-0001-DWQ.

| **Engineer:** BOBBY ALLARD | | PE Stamp Below |
|---|---|---|
| Title | VICE PRESIDENT | |
| Company | Allard Engineering | |
| Address | 16866 Seville Avenue, Fontana, CA 92335 | |
| Email | rallard@allardeng.com | |
| Telephone # | 909-356-1815 | |
| Signature | Robert K. Allard | |
| Date | 9-3-2024 | |



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# Section I – Introduction

This WQMP has been prepared specifically for the Phase II Small MS4 General Permit in the Mojave River Watershed. This location is within the jurisdiction of the Lahontan Regional Water Quality Control Board (LRWQCB).

# Section 1 Discretionary Permit(s)

## Form 1-1 Project Information

| | | | | | |
|---|---|---|---|---|---|
| Project Name Cargo Solution Express | | APN: 3064-591-12,13 & 631-01 | | | |
| Project Owner Contact Name: | | Bobby Kang | | | |
| Mailing Address: | 14581 Valley Blvd. Fontana, CA 92335 | E-mail Address: | bobby@cargosolutionexpress.com | Telephone: | 909-350-1644 |
| Permit/Application Number(s): | | | Tract/Parcel Map Number(s): | APN: 3064-591-12,13 & 631-01 | |
| Additional Information/ Comments: Site Coordinates | | Latitude: 34.4148, Longitude: -117.3925 | | | |
| Description of Project: | | The project site is a 20.33 acre of proposed development of Commercial Facility located in the City of Hesperia, County of San Bernardino, State of California. Consist of Warehouse & Truck/Trailer parking. The proposed site development is for combined 2 Parcels which consist of a single drainage area DA-1 with two Drainage Managemen Areas DMA-1,2.<br><br>In DMA-1 (10.5 acres), the on site drainage systems consist of swales, grated inlets with filter insert and pipes will convey the flows to the proposed infiltration/retention basin-1 with two-stage pits system (Maxwell plus Drywell System) at the northeast corner in the drainage management area DMA-1. The proposed infiltration/retention basin-1 with two-stage pits system is sized to qualify for both required WQMP volume (30,956 CF) as well as the required detention volume (55,572 CF) from the drainage management area DMA-1.<br><br>In DMA-2 (9.83 acres), the on site drainage systems consist of swales, grated inlets with filter insert and pipes will convey the flows to the proposed infiltration/retention basin-2 with two-stage pits system (Maxwell plus Drywell System) at the northwest corner in the drainage management area DMA-2. The proposed infiltration/retention basin-2 with two-stage pits system is sized to qualify for both required WQMP volume (28,981 CF) as well as the required detention volume (52,035 CF) from the drainage management area DMA-1.<br><br>Detention volume has been calculated based upon the City of Hesperia "13.5-cf per 100-sf of impervious area" rule. Required combined detention volume (107,606 CF) exceeds the combined water quality volume (59,937 CF) from DMA-1 & DMA-2. The infiltration/retention basin-1 with two-stage pits system will drain out at the northeast corner of DMA-1 to Poplar Street via undersidewalk parkway drain when reaches capacity. The infiltration/retention basin-2 with two-stage pits system will drain out at the northeast corner of DMA-2 to Poplar Street via undersidewalk parkway drain when reaches capacity. | | | |

| | |
|---|---|
| Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy. | |

# Section 2 Project Description

## 2.1 Project Information

### 2.1.1 Project Sizing Categorization

If the Project is greater than 5,000 square feet, and not on the excluded list as found on Section 1.4 of the TGD, the Project is a Regulated Development Project.

If the Project is creating and/or replacing greater than 2,500 square feet but less than 5,000 square feet of impervious surface area, then it is considered a Site Design Only project. This criterion is applicable to all development types including detached single family homes that create and/or replace greater than 2,500 square feet of impervious area and are not part of a larger plan of development.

**Form 2.1-1 Description of Proposed Project**

**1** Regulated Development Project Category (Select all that apply):

| | | | |
|---|---|---|---|
| ☒ #1 New development involving the creation of 5,000 ft² or more of impervious surface collectively over entire site | ☐ #2 Significant re-development involving the addition or replacement of 5,000 ft² or more of impervious surface on an already developed site | ☐ #3 Road Project – any road, sidewalk, or bicycle lane project that creates greater than 5,000 square feet of contiguous impervious surface | ☐ #4 LUPs – linear underground/overhead projects that has a discrete location with 5,000 sq. ft. or more new constructed impervious surface |

☐ Site Design Only (Project Total Square Feet > 2,500 but < 5,000 sq.ft.) *Will require source control Site Design Measures. Use the "PCMP" Template. Do not use this WQMP Template.*

| | | | | | |
|---|---|---|---|---|---|
| **2** Project Area (ft2): | 855,648 | **3** Number of Dwelling Units: | | **4** SIC Code: | 4225 |

**5** Is Project going to be phased? Yes ☒ No ☐ *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*

# 2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

## Form 2.2-1 Property Ownership/Management

Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:

Cargo Solutions Express. will be responsible to build the site and will maintain the post-developed BMPs upon completion of construction.

Address:

Cargo Solutions Express

14587 Valley Blvd, Fontana, CA 92335

-

Phone Number: 909-350-1644

# 2.3 Potential Stormwater Pollutants

| Form 2.3-1 Pollutants of Concern | | | |
|---|---|---|---|
| Pollutant | Please check: E=Expected, N=Not Expected | | Additional Information and Comments |
| Pathogens (Bacterial / Virus) | E ☒ | N ☐ | Bacteria and viruses are a potential pollutant for Commercial developments if the land use involves animal waste. Due to the nature of the development, there will be minimal animal waste associated with this land use, and the site will be treated using site and source and treatment control BMPs. Bacteria and virus can also be detected in pavement runoff; therefore, the site has incorporated treatment control throughout. All paved and hardened surfaces will flow through basins as part of Low Impact Design (LID). |
| Nutrients - Phosphorous | E ☒ | N ☐ | |
| Nutrients - Nitrogen | E ☒ | N ☐ | |
| Noxious Aquatic Plants | E ☒ | N ☐ | |
| Sediment | E ☒ | N ☐ | |
| Metals | E ☐ | N ☒ | Not identified in TGD Table 3.3 with detached SFR lots. |
| Oil and Grease | E ☒ | N ☐ | |
| Trash/Debris | E ☒ | N ☐ | |
| Pesticides / Herbicides | E ☒ | N ☐ | |
| Organic Compounds | E ☒ | N ☐ | |

# Section 3 Site and Watershed Description

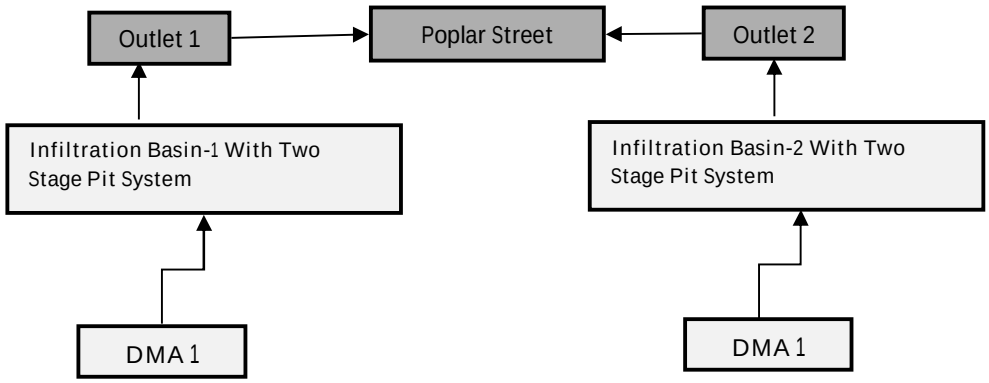
Describe the project site conditions that will facilitate the selection of BMPs through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed Drainage Management Areas (DMAs)) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. The form below is provided as an example. Then complete Forms 3.2 and 3.3 for each DA on the project site. *If the project has more than one drainage area for stormwater management, then complete additional versions of these forms for each DA / outlet. A map presenting the DMAs must be included as an appendix to the WQMP document.*

## Form 3-1 Site Location and Hydrologic Features

| Site coordinates *take GPS measurement at approximate center of site* | Latitude 34.4525 | Longitude -117.3925 | Thomas Bros Map page |
|---|---|---|---|

[1] San Bernardino County climatic region: ☒ Desert

[2] Does the site have more than one drainage area (DA): Yes☐ No☒ *If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached*




| Conveyance | |
|---|---|
| DMA1 to Outlet 1<br>DMA2 to Outlet 2 | The project site is a 20.33 acre of proposed development of Commercial Facility located in the City of Hesperia, County of San Bernardino, State of California. Consist of Warehouse & Truck/Trailer parking. The proposed site development is for combined 2 Parcels which consist of a single drainage area DA-1 with two Drainage Managemen Areas DMA-1,2.<br><br>In DMA-1 (10.5 acres), the on site drainage systems consist of swales, grated inlets with filter insert and pipes will convey the flows to the proposed infiltration/retention basin-1 with two-stage pits system (Maxwell plus Drywell System) at the northeast corner in the drainage management area DMA-1. The |

| | |
|---|---|
| | proposed infiltration/retention basin-1 with two-stage pits system is sized to qualify for both required WQMP volume (30,956 CF) as well as the required detention volume (55,572 CF) from the drainage management area DMA-1.<br><br>In DMA-2 (9.83 acres), the on site drainage systems consist of swales, grated inlets with filter insert and pipes will convey the flows to the proposed infiltration/retention basin-2 with two-stage pits system (Maxwell plus Drywell System) at the northwest corner in the drainage management area DMA-2. The proposed infiltration/retention basin-2 with two-stage pits system is sized to qualify for both required WQMP volume (28,981 CF) as well as the required detention volume (52,035 CF) from the drainage management area DMA-1.<br><br>Detention volume has been calculated based upon the City of Hesperia "13.5-cf per 100-sf of impervious area" rule. Required combined detention volume (107,606 CF) exceeds the combined water quality volume (59,937 CF) from DMA-1 & DMA-2. The infiltration/retention basin-1 with two-stage pits system will drain out at the northeast corner of DMA-1 to Poplar Street via undersidewalk parkway drain when reaches capacity. The infiltration/retention basin-2 with two-stage pits system will drain out at the northeast corner of DMA-2 to Poplar Street via undersidewalk parkway drain when reaches capacity. |

## Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1

| For Drainage Area 1's sub-watershed DMA, provide the following characteristics | DMA A | DMA B | DMA C | DMA D |
|---|---|---|---|---|
| **1** DMA drainage area ($ft^2$) | 885,648 | | | |
| **2** Existing site impervious area ($ft^2$) | 0 | | | |
| **3** Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf* | III | | | |
| **4** Hydrologic soil group *Refer to County Hydrology Manual Addendum for Arid Regions – http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_addendum.pdf* | A | | | |
| **5** Longest flowpath length (ft) | 2230 | | | |
| **6** Longest flowpath slope (ft/ft) | 1.21% | | | |
| **7** Current land cover type(s) *Select from Fig C-3 of Hydrology Manual* | Natural Cover Open Brush | | | |
| **8** Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50%* ***Attach photos of site to support rating*** | Poor | | | |


KANG, HESPERIA
Write a description for your map.
395
EG 3603
POPLAR STREET
COMM. SITE
20.33 AC
THREE FLAGS AVE
EG 3631
L=2,230'
HWY 15
Little Sisters Truck Wash
Double Eagle Transportation
Muscatel St
Flavors of India
Google Earth
N
1000 ft

## Form 3-3 Watershed Description for Drainage Area

| | |
|---|---|
| Receiving waters<br>Refer to SWRCB site:<br>http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml | Drainage Course along Poplar Street<br>Oro Grande Wash<br>Mojave River |
| Applicable TMDLs<br>*http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml* | None |
| 303(d) listed impairments<br>*http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml* | Mojave River:<br>Mojave Forks Reservoir Outlet to Upper Narrows:<br>-Fluoride<br>Upper Narrows to Lower Narrows:<br>-Fluoride<br>-Sulfates<br>-Total Dissolved Solids |
| Environmentally Sensitive Areas (ESA)<br>*Refer to Watershed Mapping Tool –*<br>*http://sbcounty.permitrack.com/WAP* | Desert Tortoise Habitat Cat 3 |
| Hydromodification Assessment | ☐ Yes *Complete Hydromodification Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-9 in submittal*<br>☒ No |




## WQMP Project Report

**County of San Bernardino Stormwater Program**

Santa Ana River Watershed Geodatabase

Friday, May 13, 2022

Note: The information provided in this report and on the Stormwater Geodatabase for the County of San Bernardino Stormwater Program is intended to provide basic guidance in the preparation of the applicant's Water Quality Management Plan (WQMP) and should not be relied upon without independent verification.

| | |
|---|---|
| **Project Site Parcel Number(s):** | 306462101, 306458104, 306458103, 306458102, 306458105 |
| **Project Site Acreage:** | 58.597 |
| **HCOC Exempt Area:** | No |
| **Closest Receiving Waters:** (Applicant to verify based on local drainage facilities and topography.) | **System Number** -<br>**Facility Name** - Oro Grande Wash<br>**Owner** - SBCFCD |
| **Closest channel segment's susceptibility to Hydromodification:** | EHM |
| **Highest downstream hydromodification susceptibility:** | NULL |
| **Is this drainage segment subject to TMDLs?** | No |
| **Are there downstream drainage segments subject to TMDLs?** | No |
| **Is this drainage segment a 303d listed stream?** | No |
| **Are there 303d listed streams downstream?** | No |
| **Are there unlined downstream waterbodies?** | No |
| **Project Site Onsite Soil Group(s):** | B |
| **Environmentally Sensitive Areas within 200':** | DESERT TORTOISE HABITAT CAT 3 |
| **Groundwater Depth (FT):** | No data available |
| **Parcels with potential septic tanks within 1000':** | No |
| **Known Groundwater Contamination Plumes within 1000':** | No |
| **Studies and Reports Related to Project Site:** | |

# Section 4 Best Management Practices (BMP)

## 4.1 Source Control BMPs and Site Design BMP Measures

The information and data in this section are required for both Regulated Development and Site Design Only Projects. Source Control BMPs and Site Design BMP Measures are the basis of site-specific pollution management.

### 4.1.1 Source Control BMPs

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

The identified list of source control BMPs correspond to the CASQA Stormwater BMP Handbook for New Development and Redevelopment.

## Form 4.1-1 Non-Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, if not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| N1 | Education of Property Owners, Tenants and Occupants on Stormwater BMPs | ☒ | ☐ | Practical education materials will be provided to property owner and warehouse Maintenance staffs covering various water quality issues that will need to be addressed on their specific site. These materials will include general practices that contribute to the protection of storm water quality and BMP's that eliminate or reduce pollution during property improvements. The developer will request these materials in writing at least 30 days prior to intended distribution and will then be responsible for publication and distribution. |
| N2 | Activity Restrictions | ☒ | ☐ | Restrictions may be developed by property owner or other mechanisms. Pesticide applications will be performed by an applicator certified by the California Department of Pesticide Regulation. Vehicle washing will be prohibited. |
| N3 | Landscape Management BMPs | ☒ | ☐ | According to the California Stormwater Quality Associations Stormwater Best Management Practice Handbook, landscape planning is implemented to reduce groundwater and storm water contamination. This will be accomplished through an infiltration basins, and landscape areas. |
| N4 | BMP Maintenance | ☒ | ☐ | Responsibility for implementation, inspection and maintenance of all BMPs (structural and non-structural) shall be consistent with the BMP Inspection and Maintenance Responsibilities Matrix provided in Section V of this WQMP, with documented records of inspections and maintenance activities completed. Cleaning of all structural BMP Facilities is scheduled by future Owner. |

| Form 4.1-1 Non-Structural Source Control BMPs | | | | |
|---|---|---|---|---|
| N5 | Title 22 CCR Compliance (How development will comply) | ☐ | ☒ | The proposed commercial development will not generate waste subject to Title 22 CCR Compliance. |
| N6 | Local Water Quality Ordinances | ☐ | ☒ | Not applicable |
| N7 | Spill Contingency Plan | ☒ | ☐ | Soil Contingency Plan shall be provided in accordance with Section 6.95 of the California Health Safety Code. |
| N8 | Underground Storage Tank Compliance | ☐ | ☒ | No underground storage tank on the site. |
| N9 | Hazardous Materials Disclosure Compliance | ☐ | ☒ | No hazardous materials on the Site.. |

| Form 4.1-1 Non-Structural Source Control BMPs | | | | |
|---|---|---|---|---|
| Identifier | Name | Check One | | Describe BMP Implementation OR, if not applicable, state reason |
| | | Included | Not Applicable | |
| N10 | Uniform Fire Code Implementation | ☐ | ☒ | The proposed Commercial project will not store toxic or highly toxic compressed gases. |
| N11 | Litter/Debris Control Program | ☒ | ☐ | Litter control onsite will include the use of litter patrols, violation reporting and clean up during landscaping maintenance activities and as needed to ensure good housekeeping of the project's common areas. |
| N12 | Employee Training | ☒ | ☐ | All employees, contractors and subcontractors of the property management shall be trained on the proper use and staging of landscaping and other materials with the potential to impact runoff and proper clean up of spills and materials. |

| | | | | |
|---|---|---|---|---|
| N13 | Housekeeping of Loading Docks | ☒ | ☐ | Trucking maintenance staffs/Operators will be instructed to keep all areas of loading docks clean and free of Trash / debris at all time. |
| N14 | Drop Inlets Inspection Program | ☒ | ☐ | As required by the TGD, at least 80% of the project's private drainage facilities shall be inspected, cleaned/maintained annually, with 100% of facilities inspected and maintained within a two-year period. Drainage facilities include catch basins (storm drain inlets), detention basins, retention basins, open drainage channel. |
| N15 | Vacuum Sweeping of Private Streets and Parking Lots | ☒ | ☐ | The project's private streets drives parking lot shall be swept, at minimum, prior to the start of the traditional rainy season and as needed. |
| N16 | Other Non-structural Measures for Public Agency Projects | ☐ | ☒ | No other non-structural measures required. |
| N17 | Comply with all other applicable NPDES permits | ☐ | ☒ | No other applicable NPDES permits required. |

## Form 4.1-2 Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, If not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| S1 | Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13) | ☒ | ☐ | Storm drain stencils or signage prohibiting dumping and discharge of materials ("No Dumping – Drains to Ocean") shall be provided adjacent to each of the project's proposed inlets. The stencils shall be inspected and re-stenciled as needed to maintain legibility. |
| S2 | Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34) | ☐ | ☒ | Project does not propose outdoor storage areas. |
| S3 | Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32) | ☐ | ☒ | Where and how Trash, debris and refuge Containers are stored is dictated by municipal code. |
| S4 | Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12) | ☒ | ☐ | In conjunction with routine landscaping maintenance activities, inspect irrigation for signs of leaks, overspray and repair or adjust accordingly. Adjust system cycle to accommodate seasonal fluctuations in water demand and temperatures. Ensure use of native or drought tolerant/non-invasive plant species to minimize water consumption. |
| S5 | Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement | ☒ | ☐ | New landscaped areas will be constructed at a minimum of 1 inch below existing paved areas |
| S6 | Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10) | ☐ | ☒ | Implemented the following design principles to the project: avoid disturbance of existing westerly channel, constructing retention basins. |
| S7 | Covered dock areas (CASQA New Development BMP Handbook SD-31) | ☒ | ☐ | In the design of maintenance bays & loading docks, containment is encouraged preventive measures including overflow containment structures & dead-end Sumps. However, in the case of loading dock from warehouse, engineered infiltration Systems may be considered. |
| S8 | Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31) | ☐ | ☒ | No Bays, Not applicable |

| | | | | |
|---|---|---|---|---|
| S9 | Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No Vehicle Wash at the site, Not applicable |
| S10 | Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36) | ☐ | ☒ | No outdoor Processing, Not applicable |
| | | Included | Not Applicable | |
| S11 | Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No equipment wash areas, Not applicable |
| S12 | Fueling areas (CASQA New Development BMP Handbook SD-30) | ☒ | ☐ | Will comply with the City requirements. Water from fueling area will be directed to drain into the site sewer system. |
| S13 | Hillside landscaping (CASQA New Development BMP Handbook SD-10) | ☐ | ☒ | No Hillside Landscaping, Not applicable |
| S14 | Wash water control for food preparation areas | ☐ | ☒ | No food Preparation, Not applicable |
| S15 | Community car wash racks (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No Community Car Wash, Not applicable |

### 4.1.2 Site Design BMPs

As part of the planning phase of a project, the site design practices associated with new LID requirements in the Phase II Small MS4 Permit must be considered. Site design BMP measures can result in smaller Design Capture Volume (DCV) to be managed by both LID and hydromodification control BMPs by reducing runoff generation.

As is stated in the Permit, it is necessary to evaluate site conditions such as soil type(s), existing vegetation and flow paths will influence the overall site design.

Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Proposed site design practices and their implementation at this site is provided in Form 4.1-3 (Site Design Practices Check List). Proposed Site Design BMPs is provided in Form 4.3-2 (Site Design BMPs). Please refer to Form 4.1-3 and Form 4.3-2 for site design practices and site design BMPs.

# Form 4.1-3 Site Design Practices Checklist

Site Design Practices

*If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets*

Minimize impervious areas: Yes ☒ No ☐

Explanation: The site has landscaped area along the site perimeter, large number of planter areas in addition to an infiltration/retention basin with two stage pits system.

Maximize natural infiltration capacity; Including improvement and maintenance of soil: Yes ☒ No ☐

Explanation: Runoff from impervious surfaces will be conveyed through landscaped areas along site perimeter and the planters so that infiltration is maximized. Runoff will also be intercepted by an infiltration/retention basin-1,2 with two strage pits system.

Preserve existing drainage patterns and time of concentration: Yes ☒ No ☐

Explanation: The site currently drains Northeast. Post developed flow will also drain Northeast this is consistent with existing and Master Planned flow patterns.

Disconnect impervious areas. Including rerouting of rooftop drainage pipes to drain stormwater to storage or infiltration BMPs instead of to storm drain : Yes ☒ No ☐

Explanation: Part of the impervious areas including rerouting rooftop drainage pipes will be drained into landscaped areas where available & convyed to infiltration/retention basin-1,2 with two stage pits system.

Use of Porous Pavement.: Yes ☐ No ☒

Explanation: Due to the low infiltration capability of the underlying soil and site constraint, the site is proposed to drain to the infiltration/retention basin-1,2 with two stage pits system for infiltration.

Protect existing vegetation and sensitive areas: Yes ☐ No ☒

Explanation: There are no environmentally sensitive portions onsite and existing vegetation will be kept as much as possible.

Re-vegetate disturbed areas. Including planting and preservation of drought tolerant vegetation. : Yes ☒ No ☐

Explanation: Part of the disturbed areas will be revegeated with drought tolerant vegetation.

Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐

Explanation: No compaction will be performed within the area of landscaping/planters and the proposed infiltration/retention basin-1,2 with two stage pits system.

Utilize naturalized/rock-lined drainage swales in place of underground piping or imperviously lined swales: Yes ☐ No ☒

Explanation: Part of the Runoff will be rerouted into the landscape area and will be conveyed & intercepted by the infiltration/retention-1,2 basin with two stage pits system for infiltration.

Stake off areas that will be used for landscaping to minimize compaction during construction: Yes ☒ No ☐

Explanation: No compaction will be performed within the area where landscape areas are proposed.

Use of Rain Barrels and Cisterns, Including the use of on-site water collection systems.: Yes ☐ No ☒

Explanation: Instead, the site is utilizing the proposed infiltration/retention basin-1,2 with two stage pits system for water collection and infiltration.

Stream Setbacks. Includes a specified distance from an adjacent steam: : Yes ☐ No ☒

Explanation: There are no adjacent steams to the site.

# 4.2 Treatment BMPs

After implementation and design of both Source Control BMPs and Site Design BMP measures, any remaining runoff from impervious DMAs must be directed to one or more on-site, treatment BMPs (LID or biotreatment) designed to infiltrate, evaportranspire, and/or bioretain the amount of runoff specified in Permit Section E.12.e (ii)(c) Numeric Sizing Criteria for Storm Water Retention and Treatment.

## 4.2.1 Project Specific Hydrology Characterization

<table>
<tr><th colspan="3">Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DMA-1)</th></tr>
<tr><td>1 Project area DMA 1 ($ft^2$):<br>457,380</td><td>2 Imperviousness after applying preventative site design practices (Imp%): 90%</td><td>3 Runoff Coefficient (Rc): 0.73<br>$R_c = 0.858(Imp\%)^{\wedge 3}-0.78(Imp\%)^{\wedge 2}+0.774(Imp\%)+0.04$</td></tr>
<tr><td colspan="3">4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.458 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html</td></tr>
<tr><td colspan="3">5 Compute $P_6$, Mean 6-hr Precipitation (inches): 0.5665<br>$P_6$ = Item 4 *$C_1$, where $C_1$ is a function of site climatic region specified in Form 3-1 Item 1 (Desert = 1.2371)</td></tr>
<tr><td colspan="2">6 Drawdown Rate<br>Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.</td><td>24-hrs ☐<br>48-hrs ☒</td></tr>
<tr><td colspan="3">7 Compute design capture volume, DCV ($ft^3$): 30,956<br>DCV = 1/12 * [Item 1* Item 3 *Item 5 * $C_2$], where $C_2$ is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)<br>Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2</td></tr>
</table>

## Target Captured Volume/Retention Volume Calculation
## Watershed DMA 1 (West Lot)

1) Calculate the "Watershed Imperviousness Ratio", I which is equal to the percent of impervious area in the BMP Drainage Area divided by 100

Imperviousness(i)= **0.9**

Total Acreage(A) = **10.50** 457,380

2) Calculate the composite Runoff Coefficient $C_{bmp}$ for the drainage area

$C_{bmp} = 0.858i^3-0.78i^2+0.774i+0.04$

$C_{bmp}$ = 0.73

3) Determine which Regression Coefficient to use by region the project is located in

| | |
|---|---|
| Valley | 1.481 |
| Mountain | 1.909 |
| Desert | 1.237 |

Regression coefficient for this project is: 1.237

4) Determine the area averaged "6 hour Mean Storm Rainfall" , $P_6$

2 yr 1 Hr Rainfall Depth per NOAA Atlas 14= **0.458** inches

$P_6$ = 2 yr 1 hr Rainfall x Regression coefficient

$P_6$ = 0.5665 inches

5) Determine Regression Constant (a) for 48 hour drawdown

a for 24 hour = 1.582
a for 48 hour = 1.963

a = 1.963

6) Calculate the Maximized Detention Volume, $P_0$

$P_0 = C \times a \times P6$

Po(inches) = 0.8122

7) Calculate the Target Capture Volume, $V_0$, in acre feet

$V_0 = (P_0 * A)/12$

**$V_0$ = 0.71 acre-feet**
**$V_0$ = 30,956 CF**

8) Detention Volume Calculation:

Use City rule of "13.5-cf of retention per 100-sf of impervious area"

**Detention Volume:** **55,572 CF** [{(20.33*43560)*0.9}*13.5]/100

| Form 4.2-1 Continues: LID BMP Performance Criteria for Design Capture Volume (DMA-2) | | |
|---|---|---|
| [1] Project area DMA ($ft^2$): 428,268 | [2] Imperviousness after applying preventative site design practices (Imp%): 90% | [3] Runoff Coefficient (Rc): 0.73<br>*$R_c = 0.858(Imp\%)^{\wedge 3}-0.78(Imp\%)^{\wedge 2}+0.774(Imp\%)+0.04$* |
| [4] Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.458 *http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html* | | |
| [5] Compute $P_6$, Mean 6-hr Precipitation (inches): 0.5665<br>*$P_6$ = Item 4 *$C_1$, where $C_1$ is a function of site climatic region specified in Form 3-1 Item 1 (Desert = 1.2371)* | | |
| [6] Drawdown Rate<br>*Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.* | | 24-hrs ☐<br>48-hrs ☒ |
| [7] Compute design capture volume, DCV ($ft^3$): 28,981<br>*DCV = 1/12 * [Item 1* Item 3 *Item 5 * $C_2$], where $C_2$ is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*<br>*Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2* | | |

Combined Design Capture Volume from DA-1 (DMA-1 & DMA-2): 59,937 CF

**Target Captured Volume/Retention Volume Calculation**
**Watershed DMA 2 (East Lot)**

1) Calculate the "Watershed Imperviousness Ratio", I which is equal to the percent of impervious area in the BMP Drainage Area divided by 100

Imperviousness(i)= **0.9**

Total Acreage(A) = **9.83** 428,268

2) Calculate the composite Runoff Coefficient $C_{bmp}$ for the drainage area

$C_{bmp} = 0.858i^3-0.78i^2+0.774i+0.04$

$C_{bmp}$ = 0.73

3) Determine which Regression Coefficient to use by region the project is located in

| | |
|---|---|
| Valley | 1.481 |
| Mountain | 1.909 |
| Desert | 1.237 |

Regression coefficient for this project is: 1.237

4) Determine the area averaged "6 hour Mean Storm Rainfall" , $P_6$

2 yr 1 Hr Rainfall Depth per NOAA Atlas 14= **0.458** inches

$P_6$ = 2 yr 1 hr Rainfall x Regression coefficient

$P_6$ = 0.5665 inches

5) Determine Regression Constant (a) for 48 hour drawdown

a for 24 hour = 1.582
a for 48 hour = 1.963

a = 1.963

6) Calculate the Maximized Detention Volume, $P_0$

$P_0 = C \times a \times P6$

Po(inches) = 0.8122

7) Calculate the Target Capture Volume, $V_0$, in acre feet

Required Detention Volume Calculation

$V_0 = (P_0 * A)/12$

**$V_0$ = 0.67 acre-feet**
**$V_0$ = 28,981 CF**

8) Detention Volume Calculation:

Use City rule of "13.5-cf of retention per 100-sf of impervious area"

**Detention Volume:** **52,035 CF** [{(20.33*43560)*0.9}*13.5]/100

**NOAA Atlas 14, Volume 6, Version 2**
**Location name: Hesperia, California, USA***
**Latitude: 34.4148°, Longitude: -117.3924°**
**Elevation: 3620.3 ft****
* source: ESRI Maps
** source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

## PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 0.087 (0.072-0.106) | 0.124 (0.102-0.151) | 0.172 (0.142-0.211) | 0.212 (0.173-0.262) | 0.267 (0.211-0.341) | 0.310 (0.240-0.404) | 0.354 (0.267-0.473) | 0.400 (0.294-0.550) | 0.464 (0.327-0.665) | 0.514 (0.350-0.762) |
| 10-min | 0.125 (0.103-0.152) | 0.177 (0.147-0.217) | 0.247 (0.203-0.302) | 0.304 (0.248-0.375) | 0.383 (0.303-0.489) | 0.444 (0.344-0.579) | 0.507 (0.383-0.678) | 0.573 (0.421-0.788) | 0.664 (0.468-0.953) | 0.736 (0.501-1.09) |
| 15-min | 0.151 (0.125-0.184) | 0.214 (0.177-0.262) | 0.298 (0.246-0.366) | 0.367 (0.300-0.454) | 0.463 (0.366-0.591) | 0.537 (0.416-0.700) | 0.613 (0.463-0.820) | 0.693 (0.509-0.953) | 0.804 (0.566-1.15) | 0.890 (0.606-1.32) |
| 30-min | 0.228 (0.189-0.278) | 0.324 (0.268-0.396) | 0.451 (0.371-0.552) | 0.555 (0.454-0.686) | 0.699 (0.553-0.893) | 0.811 (0.628-1.06) | 0.927 (0.700-1.24) | 1.05 (0.769-1.44) | 1.21 (0.855-1.74) | 1.35 (0.915-2.00) |
| 60-min | 0.323 (0.267-0.394) | 0.458 (0.379-0.560) | 0.637 (0.525-0.781) | 0.785 (0.642-0.970) | 0.989 (0.782-1.26) | 1.15 (0.888-1.50) | 1.31 (0.990-1.75) | 1.48 (1.09-2.04) | 1.72 (1.21-2.46) | 1.90 (1.30-2.82) |
| 2-hr | 0.473 (0.391-0.577) | 0.641 (0.530-0.784) | 0.869 (0.716-1.07) | 1.06 (0.867-1.31) | 1.33 (1.05-1.70) | 1.54 (1.19-2.01) | 1.76 (1.33-2.36) | 2.00 (1.47-2.75) | 2.33 (1.64-3.34) | 2.59 (1.76-3.85) |
| 3-hr | 0.596 (0.494-0.728) | 0.797 (0.659-0.974) | 1.07 (0.882-1.31) | 1.30 (1.06-1.61) | 1.63 (1.29-2.08) | 1.89 (1.46-2.46) | 2.16 (1.63-2.89) | 2.46 (1.81-3.38) | 2.87 (2.02-4.12) | 3.21 (2.19-4.77) |
| 6-hr | 0.849 (0.702-1.04) | 1.12 (0.929-1.37) | 1.50 (1.24-1.84) | 1.82 (1.49-2.25) | 2.28 (1.81-2.92) | 2.66 (2.06-3.47) | 3.05 (2.31-4.08) | 3.48 (2.56-4.79) | 4.10 (2.89-5.87) | 4.60 (3.13-6.83) |
| 12-hr | 1.11 (0.918-1.35) | 1.51 (1.24-1.84) | 2.05 (1.69-2.51) | 2.51 (2.05-3.10) | 3.17 (2.51-4.06) | 3.71 (2.87-4.84) | 4.28 (3.23-5.72) | 4.90 (3.60-6.73) | 5.78 (4.07-8.29) | 6.51 (4.43-9.66) |
| 24-hr | 1.50 (1.33-1.73) | 2.11 (1.87-2.43) | 2.93 (2.59-3.39) | 3.63 (3.18-4.24) | 4.64 (3.93-5.58) | 5.45 (4.52-6.70) | 6.31 (5.11-7.94) | 7.23 (5.70-9.37) | 8.56 (6.47-11.6) | 9.65 (7.05-13.5) |
| 2-day | 1.73 (1.54-2.00) | 2.43 (2.15-2.80) | 3.40 (3.00-3.93) | 4.23 (3.70-4.93) | 5.43 (4.60-6.54) | 6.41 (5.32-7.88) | 7.46 (6.04-9.40) | 8.61 (6.78-11.1) | 10.3 (7.76-13.9) | 11.6 (8.50-16.3) |
| 3-day | 1.86 (1.65-2.14) | 2.61 (2.31-3.00) | 3.65 (3.22-4.21) | 4.55 (3.98-5.30) | 5.86 (4.96-7.05) | 6.94 (5.76-8.53) | 8.10 (6.56-10.2) | 9.37 (7.38-12.1) | 11.2 (8.49-15.2) | 12.8 (9.33-17.8) |
| 4-day | 2.00 (1.78-2.31) | 2.81 (2.49-3.24) | 3.93 (3.47-4.54) | 4.91 (4.30-5.72) | 6.33 (5.36-7.62) | 7.50 (6.22-9.22) | 8.76 (7.10-11.0) | 10.1 (7.99-13.1) | 12.2 (9.20-16.4) | 13.9 (10.1-19.4) |
| 7-day | 2.25 (1.99-2.59) | 3.13 (2.77-3.61) | 4.36 (3.85-5.04) | 5.42 (4.75-6.32) | 6.97 (5.90-8.39) | 8.24 (6.84-10.1) | 9.62 (7.79-12.1) | 11.1 (8.76-14.4) | 13.3 (10.1-18.0) | 15.1 (11.1-21.2) |
| 10-day | 2.40 (2.13-2.77) | 3.34 (2.95-3.85) | 4.63 (4.09-5.35) | 5.75 (5.04-6.70) | 7.37 (6.25-8.88) | 8.71 (7.23-10.7) | 10.1 (8.22-12.8) | 11.7 (9.24-15.2) | 14.0 (10.6-18.9) | 15.9 (11.6-22.2) |
| 20-day | 2.89 (2.56-3.32) | 3.99 (3.53-4.60) | 5.52 (4.87-6.38) | 6.84 (5.99-7.97) | 8.74 (7.41-10.5) | 10.3 (8.56-12.7) | 12.0 (9.72-15.1) | 13.8 (10.9-17.9) | 16.5 (12.5-22.3) | 18.8 (13.7-26.3) |
| 30-day | 3.40 (3.02-3.92) | 4.68 (4.14-5.40) | 6.45 (5.69-7.45) | 7.96 (6.98-9.28) | 10.2 (8.61-12.2) | 12.0 (9.93-14.7) | 13.9 (11.3-17.5) | 16.1 (12.7-20.8) | 19.2 (14.5-25.9) | 21.8 (15.9-30.5) |
| 45-day | 4.06 (3.60-4.67) | 5.51 (4.88-6.35) | 7.51 (6.63-8.68) | 9.24 (8.09-10.8) | 11.7 (9.95-14.1) | 13.8 (11.4-17.0) | 16.0 (13.0-20.2) | 18.5 (14.6-23.9) | 22.1 (16.7-29.8) | 25.1 (18.4-35.1) |
| 60-day | 4.63 (4.11-5.33) | 6.19 (5.48-7.14) | 8.34 (7.37-9.64) | 10.2 (8.93-11.9) | 12.9 (10.9-15.5) | 15.1 (12.5-18.6) | 17.5 (14.2-22.0) | 20.2 (15.9-26.1) | 24.1 (18.2-32.6) | 27.5 (20.1-38.4) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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## PF graphical

## ACTUAL IMPERVIOUS COVER

| Land Use (1) | Range-Percent | Recommended Value For Average Conditions-Percent (2) |
|---|---|---|
| Natural or Agriculture | 0 - 0 | 0 |
| Public Park | 10 - 25 | 15 |
| School | 30 - 50 | 40 |
| Single Family Residential: (3) | | |
| 2.5 acre lots | 5 - 15 | 10 |
| 1 acre lots | 10 - 25 | 20 |
| 2 dwellings/acre | 20 - 40 | 30 |
| 3-4 dwellings/acre | 30 - 50 | 40 |
| 5-7 dwellings/acre | 35 - 55 | 50 |
| 8-10 dwellings/acre | 50 - 70 | 60 |
| More than 10 dwellings/acre | 65 - 90 | 80 |
| Multiple Family Residential: | | |
| Condominiums | 45 - 70 | 65 |
| Apartments | 65 - 90 | 80 |
| Mobile Home Park | 60 - 85 | 75 |
| Commercial, Downtown Business or Industrial | 80 - 100 | 90 |

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.

2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area shall always be made, and a review of aerial photos, where available, may assist in estimating the percentage of impervious cover in developed areas.

3. For typical equestrian subdivisions increase impervious area 5 percent over the values recommended in the table above.

**SAN BERNARDINO COUNTY**
HYDROLOGY MANUAL

ACTUAL IMPERVIOUS COVER
FOR
DEVELOPED AREAS



Figure C-4

## Form 4.2-2 Summary of Hydromodification Assessment

Is the change in post- and pre- condition flows captured on-site? : Yes ☒ No ☐

If "Yes", then complete Hydromodification assessment of site hydrology for 10yr storm event using Forms 4.2-3 through 4.2-5 and insert results below *(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual- Addendum 1)*

If "No," then proceed to Section 4.3 BMP Selection and Sizing

| Condition | Runoff Volume ($ft^3$) | Time of Concentration (min) | Peak Runoff (cfs) |
|---|---|---|---|
| Pre-developed | 1 *Form 4.2-3 Item 12* | 2 *Form 4.2-4 Item 13* | 3 *Form 4.2-5 Item 10* |
| Post-developed | 4 *Form 4.2-3 Item 13* | 5 *Form 4.2-4 Item 14* | 6 *Form 4.2-5 Item 14* |
| Difference | 7 *Item 4 – Item 1* | 8 *Item 2 – Item 5* | 9 *Item 6 – Item 3* |
| Difference (as % of pre-developed) | 10 % *Item 7 / Item 1* | 11 % *Item 8 / Item 2* | 12 % *Item 9 / Item 3* |

HCOC Mitigation:

In developed condition the site will drain to the proposed Infiltration/Retention Basin 1-4 for mitigation of WQMP volume and the Detention Volume per the City requirement.

The "13.5-cf of retention per 100-sf of impervious area" rule was used to quantify and mitigate onsite retention volume to comply with the City mitigation requirement.

When the Infiltration/Retention Basin-1,2 with two stage pits system reaches their capacity, they will drain to the Poplar Street via under sidewalk parkway drains to the existing drainage course located at the northeast corner of the site. Water will ultimately drain to Oro Grande Wash via the existing drainage courses.

## 4.3 BMP Selection and Sizing

Complete the following forms for each project site DA to document that the proposed treatment (LID/Bioretention) BMPs conform to the project DCV developed to meet performance criteria specified in the Phase II Small MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the Phase II Small MS4 Permit (see Section 5.3 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

## Form 4.3-1 Infiltration BMP Feasibility (DA 1)

Feasibility Criterion – Complete evaluation for each DA on the Project Site

[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒
*Refer to Section 5.3.2.1 of the TGD for WQMP*

If Yes, Provide basis: (attach)

[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒
(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):

- The location is less than 50 feet away from slopes steeper than 15 percent
- The location is less than ten feet from building foundations or an alternative setback.
- A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.

If Yes, Provide basis: (attach)

[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒
*See Section 3.5 of the TGD for WQMP and WAP*

If Yes, Provide basis: (attach)

[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒
*If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Selection and Evaluation of Biotreatment BMP.*
*If no, then proceed to Item 8 below.*

[8] Any answer from Item 4 through Item 6 is "Yes": Yes ☐ No ☒
*If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Site Design BMP.*
*If no, then proceed to Item 9, below.*

[9] All answers to Item 1 through Item 6 are "No":
*Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.*
*Proceed to Form 4.3-2, Site Design BMPs.*

### 4.3.2 Site Design BMP

Section E.12.e. of the Small Phase II MS4 Permit emphasizes the use of LID preventative measures; and the use of Site Design Measures reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable Site Design Measures shall be provided except where they are mutually exclusive

with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of Site Design BMPs. If a project cannot feasibly meet BMP sizing requirements or cannot fully address hydromodification, feasibility of all applicable Site Design BMPs must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design BMP. Refer to Section 5.4 in the TGD for more detailed guidance.

## Form 4.3-2 Site Design BMPs (DA 1)

| | | | |
|---|---|---|---|
| 1 Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☒ No ☐ *If yes, complete Items 2-5; If no, proceed to Item 6* | DA 1 DMA 1 BMP Type | DA 1 DMA 2 BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| 2 Total impervious area draining to pervious area ($ft^2$) | 182,952 | 171,190 | |
| 3 Ratio of pervious area receiving runoff to impervious area | 0.11 | 0.09 | |
| 4 Retention volume achieved from impervious area dispersion ($ft^3$) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff* | 838 CF | 642 CF | |
| 5 Sum of retention volume achieved from impervious area dispersion ($ft^3$): 1,480 *$V_{retention}$ =Sum of Item 4 for all BMPs* | | | |
| 6 Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☐ No ☐ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14* | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| 7 Ponding surface area ($ft^2$) | | | |
| 8 Ponding depth (ft) (min. 0.5 ft.) | | | |
| 9 Surface area of amended soil/gravel ($ft^2$) | | | |
| 10 Average depth of amended soil/gravel (ft) (min. 1 ft.) | | | |
| 11 Average porosity of amended soil/gravel | | | |
| 12 Retention volume achieved from on-lot infiltration ($ft^3$) *$V_{retention}$ = (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)* | | | |
| 13 Runoff volume retention from on-lot infiltration ($ft^3$): *$V_{retention}$ =Sum of Item 12 for all BMPs* | | | |

## Form 4.3-2 Site Design BMPs (DA 1)

## Form 4.3-2 cont. Site Design BMPs (DA 1)

| | | | |
|---|---|---|---|
| 14 Implementation of Street Trees: Yes ☐ No ☐<br>*If yes, complete Items 14-18. If no, proceed to Item 19* | DA DMA<br>BMP Type | DA DMA<br>BMP Type | DA DMA<br>BMP Type<br>*(Use additional forms for more BMPs)* |
| 15 Number of Street Trees | | | |
| 16 Average canopy cover over impervious area ($ft^2$) | | | |
| 17 Runoff volume retention from street trees ($ft^3$)<br>*$V_{retention}$ = Item 15 * Item 16 * (0.05/12) assume runoff retention of 0.05 inches* | | | |
| 18 Runoff volume retention from street tree BMPs ($ft^3$): *$V_{retention}$ = Sum of Item 17 for all BMPs* | | | |
| 19 Total Retention Volume from Site Design BMPs: 1,480 *Sum of Items 5, 13 and 18* | | | |

### 4.3.3 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix C of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

.

# Form 4.3-2 Infiltration LID BMP - including underground BMPs (DA-1: DMA-1, DMA-2)

| | | | |
|---|---|---|---|
| 1 Remaining LID DCV not met by site design BMP ($ft^3$): 59,937 *$V_{unmet}$ = Form 4.2-1 Item 7 - Form 4.3-2 Item19* | | | |
| BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs* | DMA 1 BMP Type Inf. Basin 1 | DMA 2 BMP Type : Inf. Basin-2 | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| 2 Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix C of the TGD for WQMP for minimum requirements for assessment methods* | 6.45 | 6.45 | |
| 3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D* | 2.25 | 2.25 | |
| 4 Design percolation rate (in/hr) *$P_{design}$ = Item 2 / Item 3* | 2.85 | 2.85 | |
| 5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1* | 48 | 48 | |
| 6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details* | 11.4 | 11.4 | |
| 7 Ponding Depth (ft) *$d_{BMP}$ = Minimum of (1/12*Item 4*Item 5) or Item 6* | 4.0 | 4.0 | |
| 8 Infiltrating surface area, $SA_{BMP}$ ($ft^2$) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP* | 56,794 | 59,140 | |
| 9 Amended soil depth, $d_{media}$ (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details* | 0 | 0 | |
| 10 Amended soil porosity | 0 | 0 | |
| 11 Gravel depth, $d_{media}$ (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details* | - | - | |
| 12 Gravel porosity | - | - | |
| 13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs* | 3 hrs | 3 hrs | |
| 14 Above Ground Retention Volume ($ft^3$) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]* | 56,794 | 59,140 | |
| 15 Underground Retention Volume ($ft^3$) *Volume determined using manufacturer's specifications and calculations* | 1,037 | 1,037 | |
| 16 Total Retention Volume from LID Infiltration BMPs: 118,008 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)* | | | |
| 17 Fraction of DCV achieved with infiltration BMP: 197% *Retention% = Item 16 / Form 4.2-1 Item 7* | | | |
| 18 Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐ *If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that* | | | |

*the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.*

RET/INF BASIN-1 (WEST LOT)

| | | | |
|---|---|---|---|
| Surface Area | 8461 | SF | Inf. Surface area at halfway water depth |
| Rock Depth | 0 | FT | |
| Surface Depth | 6 | FT | Ponding Water Depth |
| *Infiltration* | *0.7125* | *FT* | [(2.85/12)*3] Design Inf Rate: 2.85 "/hr per Inf. Testing Report<br>3-hr Inf. Credit while basin filling |
| Volume Provided | 56794 | CF | |
| *Volume Needed* | *55,572* | *CF* | Detention Vol. Required per City Standard From DMA-1 |
| Difference | 1,222 | CF | |

Total Retention/Infiltration Vol. Provided in Basin-1: 56,794 CF

Infiltration Drawdown Time Calculation: Inf. Basin-1 (In DMA-1)

| | | | |
|---|---|---|---|
| Infiltration Surface Area Provided: | 8,461 | SF | |
| Infiltration Rate per WebSoil Report | 6.45 | in/hr | (Average Inf. Rate per Inf Testing Report) |
| | 0.54 | ft/hr | |
| Facor of Safety | 2.25 | | |
| Design Infiltration Rate | 0.239 | ft/hr | |
| | | | |
| Volume needed to be Infiltrated | 56,794 | cu.ft | (Provided Volume)(Reqd. Vol. 55,572 CF) |
| Infiltration Volume per hour | 2021.24 | cu.ft/hr | (8,461 sft * 0.239 ft/hr) |
| | | | |
| Infiltration Draw Down Time | 28.10 | Hours | (56,794 cu.ft / 2021.24 cu.ft/hr) |
| | 28 hr | | < 48 hr draw down time. OK |

RET/INF BASIN-2 (EAST LOT)

| | | | |
|---|---|---|---|
| Surface Area | 14925 | SF | Inf. Surface area at halfway water depth |
| Rock Depth | 0 | FT | |
| Surface Depth | 3.25 | FT | Ponding Water Depth |
| *Infiltration* | *0.7125* | *FT* | [(2.85/12)*3] Design Inf Rate: 2.85 "/hr per Inf. Testing Report<br>3-hr Inf. Credit while basin filling |
| Volume Provided | 59140 | CF | |
| *Volume Needed* | *52,035* | *CF* | Detention Vol. Required per City Standard From DMA-2 |
| Difference | 7,105 | CF | |

Total Retention/Infiltration Vol. Provided in Basin-1: 59,140CF

Infiltration Drawdown Time Calculation: Inf. Basin-2 (In DMA-2)

| | | | |
|---|---|---|---|
| Infiltration Surface Area Provided: | 14,925 | SF | |
| Infiltration Rate per WebSoil Report | 6.45 | in/hr | (Average Inf. Rate per Inf Testing Report) |
| | 0.54 | ft/hr | |
| Facor of Safety | 2.25 | | |
| Design Infiltration Rate | 0.239 | ft/hr | |
| | | | |
| Volume needed to be Infiltrated | 59,140 | cu.ft | (Provided Volume)(Reqd. Vol. 52,035 CF) |
| Infiltration Volume per hour | 3565.42 | cu.ft/hr | (14,925 sft * 0.239 ft/hr) |
| | | | |
| Infiltration Draw Down Time | 16.59 | Hours | (59,140 cu.ft / 3,665.42 cu.ft/hr) |
| | 17 hr | | < 48 hr draw down time. OK |

# Two Stage Pit Rentention Capacity Calculation in DMA-1 & DMA-2

## Drywell Infiltration and Retention Volume Capacity Calc:

| | | | |
|---|---|---|---|
| *Design Inf. Rate (Assumed Deep Inf) | 1.13 | IN/HR | 0.000026 FT/SEC |
| Drawdown Time | 48 | HR | *Infiltration rate provided by |
| Min Depth to Infiltration | 9 | FT | the Maxwell Plus drywell |
| Proposed Drywell Depth | 40 | FT | system per their designed and |
| Drywell Diameter- | 5 | FT | installed system within 1-mile |
| Drywell Rock Shaft Diameter | 5 | FT | of the proposed project. |
| Bottom Surface Area | 19.63 | SF | |
| Side Surface per foot of depth | 15.71 | SF | |
| Total Side Surface Area: | 487 | SF | |
| Primary Chamber Storage Depth | 23 | FT | |
| Secondary Chamber Depth | 23 | FT | |
| Porosity of Gravel | 0.40 | | |

| | | | |
|---|---|---|---|
| Total Inf. Surface Area: | 507 | SF | |
| Combine Design Rate with Inf. Area (Dispersal Flow Rate for Drywell) (0.00004*276) | 0.0133 | CF/SEC | |
| **Pit Dispersal/Inf. Vol. with 48 HR DrawDown Time:** | **2,290** | CF | (Inf/Dispersal Vol. provided by Drywell System) |
| **Drywell System WQ Mitigation Volume:** (Drywell in 48 hour) | **2,290** | **CF** | (Inf/Dispersal Vol. provided by Combined System) |
| Storage Vol. provided in Drywell System with Primary Depth of 13-ft and two Secondary pit Depth of 13-ft: [(23'+23') x 19.63+ {(40-23)*19.63*0.4)]}] | **1,037** | **CF** | (Retention Volume provided by Drywell System) |

### Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

| Factor Category | | Factor Description | Assigned Weight (w) | Factor Value (v) | Product (p) p = w x v |
|---|---|---|---|---|---|
| A | Suitability Assessment | Soil assessment methods | 0.25 | 1 | 0.25 |
| | | Predominant soil texture | 0.25 | 1 | 0.25 |
| | | Site soil variability | 0.25 | 1 | 0.25 |
| | | Depth to groundwater / impervious layer | 0.25 | 1 | 0.25 |
| | | Suitability Assessment Safety Factor, $S_A = \Sigma p$ | | | 1.00 |
| B | Design | Tributary area size | 0.25 | 3 | 0.75 |
| | | Level of pretreatment/ expected sediment loads | 0.25 | 2 | 0.50 |
| | | Redundancy | 0.25 | 3 | 0.75 |
| | | Compaction during construction | 0.25 | 1 | 0.25 |
| | | Design Safety Factor, $S_B = \Sigma p$ | | | 2.25 |
| Combined Safety Factor, $S_{TOT} = S_A \times S_B$ | | | | | 2.25 |
| Measured Infiltration Rate, inch/hr, $K_M$ (corrected for test-specific bias) | | | | | 6.45 |
| Design Infiltration Rate, in/hr, $K_{DESIGN} = S_{TOT} / K_M$ | | | | | 2.85 |

**Supporting Data**

Briefly describe infiltration test and provide reference to test forms:

Average Inf. Rate : 6.45 in/hr Avg. Inf. Rate from two tested pit in the WQMP BMP basin. Soil Infiltration Testing Report, dated October 28, 2022
Design Inf Rate: 6.45/2.25 = 2.85"/hr

**Note:** The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

## 6.2 INFILTRATION TEST RESULTS

Based on the soils infiltration testing completed at the test locations and at the test depth as described, the observed soils' percolation rates are 5.71 inches/hour and 7.20 inches/hour for test locations P-1 and P-2, respectively.

Calculations to convert the percolation test rate to infiltration test rates in accordance with Section 2.3 of the County Handbook are presented in Table I and II below. For design, it is suggested that an appropriate Factor of Safety as selected by the design engineer should be considered to the observed field percolation rate described.

## 6.3 SUMMARY & CONVERSION CALCULATIONS

For WQMP-BMP design, based on the soils infiltration testing completed and, on the calculations as described, the following infiltration rates may be considered. Actual field test data are attached.

**TABLE I**
**Observed Infiltration Rate for Design**

| Test Location (9-23-22) | Test Depth Below Grade, feet | Porchet Method Observed Rate, inch/hour |
|---|---|---|
| P-1 | 4 | 5.71 |
| P-2 | 4 | 7.20 |

**TABLE II**
**Conversion Table (Porchet Method)**

| Test No. | Depth Test Hole, inches | Time Interval, minutes | Initial Depth, inches | Final Depth, inches | Initial Water Height, inches | Final Water Height, inches | Change in Height/ Time | Average Head Height/Time |
|---|---|---|---|---|---|---|---|---|
| | Dt | $\Delta T$ | $D_O$ | $D_f$ | $H_o=D_t-D_o$ | $H_f=D_t-D_f$ | $\Delta H= H_f-H_O$ | $H_{avg} = (H_o+H_f)/2$ |
| P-1 | 48 | 10 | 24 | 34 | 24 | 14 | 10 | 19 |
| P-2 | 48 | 10 | 24 | 36 | 24 | 12 | 12 | 18 |

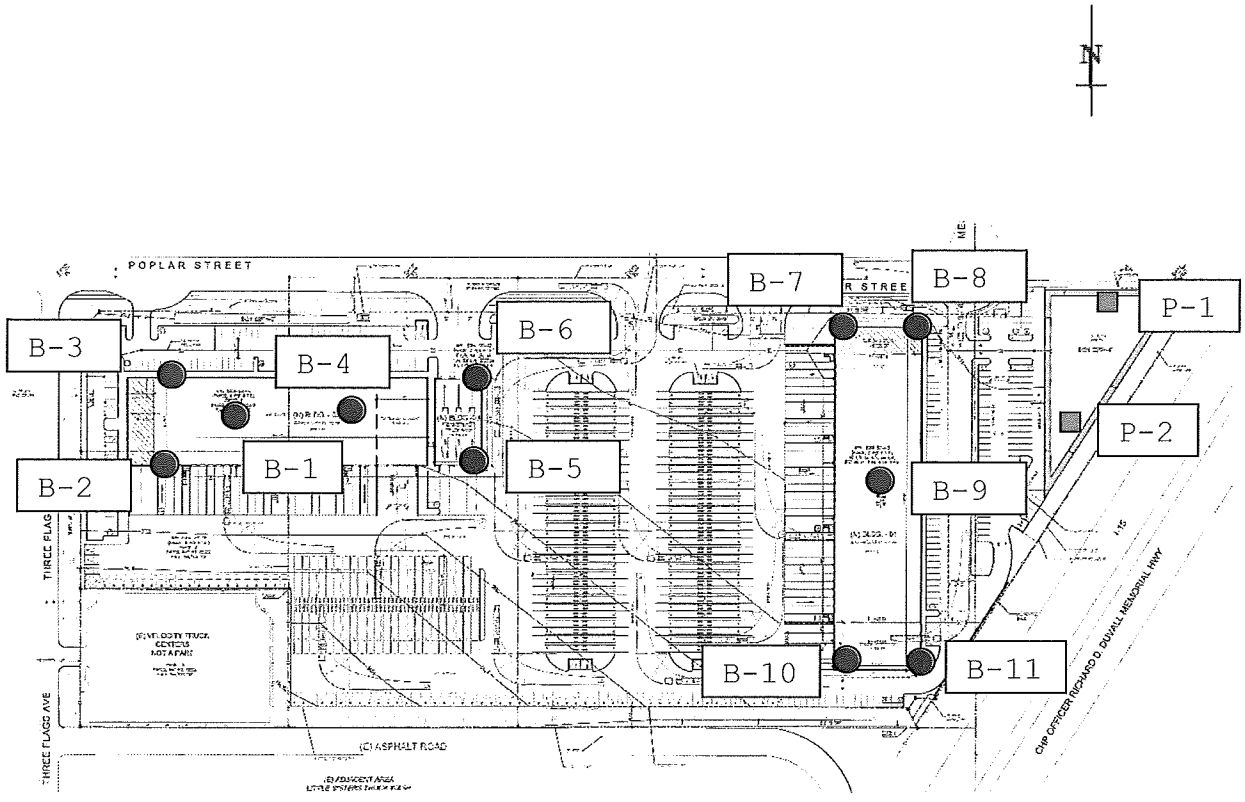
| | Infiltration Rate (It)=ΔH60r/Δt(r+2Havg) | | |
|---|---|---|---|
| | A | B | C |
| Test No. | ΔH60r | Δt(r+2Havg) | A/B=inch/hour |
| P-1 | 2400 | 420 | 5.71 |
| P-2 | 2880 | 400 | 7.20 |

Avg. Inf RAte: 6.45"/hr

Use of a safety factor of approximately 1.5 may be considered to account for long-term saturation, inconsistencies in subsoil conditions and potential for silting of percolating soils.

The infiltration rate described is based on the in-situ testing completed at the locations as suggested by the project civil engineer. In the event that the final chamber location and depth vary considerably from those described herein, supplemental soils infiltration testing may be warranted.

PLOT PLAN AND TEST LOCATIONS
Planned Cargo Solutions Express Warehouses and Truck Wash
SEC Three Flags Avenue & Poplar Street
Hesperia, California
APN: 3064-591-12, 13, 17, and 18
NTS




Legend:
B-1 Approximate Location of Test Borings for Geotechnical Study
P-1 Approximate Location of Test Boring for BMP Soils' Infiltration

Plate 1

## 4.3.5 Conformance Summary

Complete Form 4.3-8 to demonstrate how on-site LID DCV is met with proposed site design, infiltration, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

### Form 4.3-8 Conformance Summary and Alternative Compliance Volume Estimate (DA 1: DMA1 & DMA-2)

1 Total LID DCV for the Project DA-1 ($ft^3$): 59,937 *Copy Item 7 in Form 4.2-1*

2 On-site retention with site design BMP ($ft^3$): 1,480 *Copy Item18 in Form 4.3-2*

3 On-site retention with LID infiltration BMP ($ft^3$): 118,008 CF *Copy Item 16 in Form 4.3-2*

4 On-site biotreatment with volume based biotreatment BMP ($ft^3$): 0 *Copy Item 3 in Form 4.3-4*

5 Flow capacity provided by flow based biotreatment BMP (cfs): *Copy Item 6 in Form 4.3-4*

6 LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design or infiltration BMP: Yes ☒ No ☐
  *If yes, sum of Items 2, 3, and 4 is greater than Item 1*
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☐ No ☐
  *If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized*
- On-site retention and infiltration is determined to be infeasible; therefore biotreatment BMP provides biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☐
  *If yes, Form 4.3-1 Items 7 and 8 were both checked yes*

7 If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of Site Design, retention and infiltration, , and biotreatment BMPs provide less than full LID DCV capture: ☐
  *Checked yes if Form 4.3-4 Item 7is checked yes, Form 4.3-4 Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, $V_{alt}$ = (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*

- Facilities, or a combination of facilities, of a different design than in Section E.12.e.(ii)(f) may be permitted if all of the following Phase II Small MS4 General Permit 2013-0001-DWQ 55 February 5, 2013 measures of equivalent effectiveness are demonstrated:
  1) Equal or greater amount of runoff infiltrated or evapotranspired; ☐
  2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment; ☐
  3) Equal or greater protection against shock loadings and spills; ☐
  4) Equal or greater accessibility and ease of inspection and maintenance. ☐

# Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMPs included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and a Maintenance Agreement. The Maintenance Agreement must also be attached to the WQMP.

Note that at time of Project construction completion, the Maintenance Agreement must be completed, signed, notarized and submitted to the County Stormwater Department

**Form 5-1 BMP Inspection and Maintenance (use additional forms as necessary)**

| BMP | Reponsible Party(s) | Inspection/ Maintenance Activities Required | Minimum Frequency of Activities |
|---|---|---|---|
| Infiltration/Retention basin-1,2 w/two stage pits system | Cargo Solution Express | Remove accumulated trash and debris in the basin at the start and end of the wet season. Inspect for standing water at the end of the wet season.<br><br>Trim vegetation at the beginning and end of the wet season to prevent establishment of woody vegetation and for aesthetic and vector reasons.<br><br>Remove accumulated sediment and regrade when the accumulated sediment volume exceeds 10% of the basin.<br><br>Inspect two-stage pits system for any accomulated sediments, debris.<br><br>If erosion is occurring within the basin, re-vegetate immediately and stabilize with an erosion control mulch or mat until vegetation cover is establisheds Inc. | 2 times a year at the beginning and end of the rainy season (October to March) |
| Education of Property Owners, Tenants and Occupants on Stormwater BMPs | Cargo Solution Express | Practical education materials will be provided to property owners covering various water quality issues that will need to be addressed on their specific site. These materials will include general good house keeping practices that contribute to the protection of storm water quality and BMP's that eliminate or reduce pollution | *Ongoing* |

| | | | |
|---|---|---|---|
| | | during property improvements. | |
| Landscape maintenance | Cargo Solution Express | Landscape planning is implemented to reduce groundwater and storm water contamination. This will be accomplished through an infiltration basin, and landscape areas. | |
| BMP maintenance | Cargo Solution Express | See BMP fact sheets and Table 5-1 details hereon | Ongoing with every visit |
| Employee training | Cargo Solution Express | Employee training may be developed by the owner | As stated |
| Litter debris control program | Cargo Solution Express | Litter debris control program may be developed by City of Hesperia | Ongoing with every visit |
| Drop Inlets inspection program | .Cargo Solution Express | Catch basins will be inspected a minimum of once every three months during the dry season and a minimum of once every two months during the rainy season. | Place at grate installation and inspect once a year |
| Provide storm drain system stencilling and signage | Cargo Solution Express | Signs will be placed above storm drain inlets to warn the public of prohibitions against waste disposal | Inspect once a year |
| Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control | Cargo Solution Express | Rain sensors will be incorporated into the onsite sprinkler system so that no unnecessary watering of landscaped areas occurs after storm events. | Once a year or according to Manufacturer Manuals |
| Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or | Cargo Solution Express | New landscaped areas will be constructed at a minimum of 1 inch below existing paved areas | Inspect once a year |

| | | | |
|---|---|---|---|
| pavement | | | |
| Street Sweeping | Cargo Solution Express | Street weeping and Vaccuming | Bi Monthly |

# Section 6 WQMP Attachments

## 6.1. Site Plan and Drainage Plan (WQMP BMP Exhibit)

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

## 6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (as described in their Local Implementation Plan), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

## 6.3 Post Construction

Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP.

## 6.4 Other Supporting Documentation

- BMP Educational Materials
- Activity Restriction – C,C&R's & Lease Agreements

# Appendix: 6.1

## Site Plan:
## WQMP BMP Exhibit

**LATITUDE & LONGITUDE**
34.472153° N, −117.172113° W

**WEST LOT (DMA-1)**
TARGET WQ VOL.: 30,956 CF
TARGET DETENTION VOL.: 55,572 CF

**LATITUDE & LONGITUDE**
34.4154' N, −117.3925' W

(3)(10) RETENTION/INFILTRATION BASIN-1
W/TWO STAGE PITS SYSTEM
BOTTOM AREA= 5,164 SF
WATER DEPTH: 6.0', FB: 1.0'
INF. SURFACE AREA: 8,461
(AT HALFWAY WATER DEPTH)
BASIN CAPACITY: 56,794 CF

(10) OVERFLOW DISCHARGE TO STREET VIA UNDER SIDEWALK PARKWAY DRAIN

(14) TWO STAGE PITS SYSTEM (MAXWELL PLUS DRYWELL SYSTEM)
5'ø PRIMARY & SECONDARY PITS
PIT INF./DISPERSAL CAPACITY:
2,290 CF (48 HR DRAWDOWN TIME)
PIT RETENTION CAPACITY: 1,037 CF

**EAST LOT (DMA-2)**
TARGET WQ VOL.: 28,981 CF
TARGET DETENTION VOL.: 52,035 CF

**LATITUDE & LONGITUDE**
34.4154' N, −117.3898' W

(3)(10) RETENTION/INFILTRATION BASIN-2
W/TWO STAGE PITS SYSTEM
BOTTOM AREA= 11,458 SF
WATER DEPTH: 3.25', FB: 0.5'
INF. SURFACE AREA: 14,925
(AT HALFWAY WATER DEPTH)
BASIN CAPACITY: 59,140 CF

10' WIDE PIPELINE EASEMENT PER INST. NO. 92-333355, O.R.

POPLAR STREET

50' ROAD DEDICATION PER INST. NO. 92-349735, O.R.

PAVED AREA RUNOFF DIRECT TO LANDSCAPING AREA VIA THE PROP. CURB-CUT ALONG THE CURBLINE @20'

ROOF DOWNSPOUTS DIRECT ROOF RUNOFF TO LANDSCAPE AREA

FF @ 0.50%

TOP=3609.8
WATER SURFACE=3608.8
FLOOR=3602.8
VOLUME=56,794 C.F.
2-STAGE DRY WELL

TOP=3604.5
WATER SURFACE=3602.75
FLOOR=3599.5
VOLUME=59,140 CF

UNDER SIDEWALK DRAIN BASIN OVERFLOW

50' ROAD & UTILITY EASEMENT PER INST. NO. 92-349735, O.R.

CITY ACCESS TO UTILITY EASEMENT

PROPOSED RETAINING WALL

PROPOSED 20' SEWER EASEMENT

PROPOSED SEWER LINE

PROPOSED 10" SEWER TO MAIN STREET

8" EX. SEWER
2" EX. WATER
12" EX. WATER
10" EX. SEWER
6" EX. WATER
12" EX. SEWER (TO BE ABANDONED/REROUTED)

30' WIDE UTILITY EASEMENT (TO BE VACATED/REROUTED) PER INST. NO. 87-317448, O.R.

30' UTILITY EASEMENT PER INST. NO. 88-110814, O.R.

30' UTILITY EASEMENT PER INST. NO. 88-110815, O.R.

30' UTILITY EASEMENT PER INST. NO. 87-317449, O.R.

PAVED AREA RUNOFF DIRECT TO LANDSCAPING AREA VIA THE PROP. CURB-CUT ALONG THE CURBLINE @20'

THREE FLAGS AVENUE

FREEWAY I-15

STREET

DMA-1
10.5 AC

DMA-2
9.83 AC

## BMP LIST:

1. EDUCATION OF PROPERTY OWNERS (N1)
2. ACTIVITY RESTRICTIONS (N2)
3. INFILTRATION/RETENTION BASIN-1 WITH TWO STAGE PITS SYSTEM PER PLAN
4. TRAINING/EDUCATION PROGRAM (N12)
5. PARKING LOT SWEEPING/VACUUMING (N15)
6. COMMON AREA CATCH BASIN INSPECTION (N14)
7. LANDSCAPE PLANNING (N3)
8. ROOF RUNOFF CONTROLS (SD-11)
9. EFFICIENT IRRIGAION (S-4)
10. STORM DRAIN SIGNAGE (S-1)
11. TRASH STORAGE AREAS (N11)
12. TRENCH DRAIN FILTER INSERT-FLO-GARD INSERT FILTER
13. GRATE INLET FILTER INSERT- ADS FLEXSTORM PURE INLET FILTER OR APPROVED EQUAL (N14)
14. TWO-STAGE DRYWELL SYSTEM (MAXWELL PLUS DRYWELL SYSTEM)

## LEGEND:

DMA-1: DRAINAGE MANAGEMENT AREA

- DRAINAGE MANAGEMENT AREA BOUNDARY
- CATCH BASIN, DROP INLET WITH FLOGARD INSERT FILTER
- PROPOSED ONSITE STORM DRAIN
- DRAINAGE FLOW DIRECTION
- N1 NON-STRUCTURAL SOURCE CONTROL BMP IDENTIFIER
- S1 STRUCTURAL SOURCE CONTROL BMP IDENTIFIER
- SD-1 CASQA BMP IDENTIFIER

## BMP STATISTICS:

| DMAs | AREA (AC) | BMP | BMP CAPACITY (CF) | REQUIRED VOLUME (CF) | PROVIDED VOLUME (CF) |
|---|---|---|---|---|---|
| DMA-1 | 10.5 | INF/RET BASIN-1 WITH TWO STAGE PITS SYSTEM | 57,831 | 30,956 | *57,831 |
| DMA-1 | 9.83 | INF/RET BASIN-2 WITH TWO STAGE PITS SYSTEM | 60,177 | 28,981 | *60,177 |
| DA-1: 20.33 AC | | | 118,008 CF | 59,937 CF | *118,008 CF |

*INCLUDED TWO-STAGE PIT RET. CAPACITY

WATER VOLUME PROVIDED BY BASIN-1,2
W/ TWO STAGE PITS SYSTEM= 118,008 CF

REQUIRED DETENTION VOLUME= 107,606 CF FROM THE ENTIRE SITE (DA-1)

## SITE STATISTICS:

GROSS AREA: 20.33 AC (DA-1: DMA1 & DMA2)

DISTURBED AREA: 100%
PROPOSED IMPERVIOUS AREA: 90% (DMA-1, DMA-2)




VICINITY MAP
NTS

GRAPHIC SCALE
60 0 30 60 120 240
( IN FEET )
1 INCH = 60 FT.

**SITE LATITUDE & LONGITUDE**
34.4148' N, −117.3925' W

Prepared By:
ALLARD ENGINEERING
Civil Engineering - Land Surveying - Land Planning
16866 Seville Avenue
Fontana, California 92335
(909) 356-1815 Fax (909) 356-1795

Prepared For:
CARGO SOLUTIONS EXPRESS
14587 VALLEY BLVD.
FONTANA, CA 92335
PHONE: (909) 350-1644 ex 330

CITY OF HESPERIA, CALIFORNIA
# WQMP EXHIBIT
APN: 3064-591-12, 13 & 3064-631-01

Filename: I:\Bobby Kang\HESPERIA\DWG's\ENTITLEMENT\EXHIBITS\WQMP Exhibit 8-20-24.dwg

# Appendix: 6.2

## Electronic Data Submittal

# Appendix: 6.3

## O&M Plans and Maintenance Agreements for BMP

RECORDING REQUESTED BY

**City of Hesperia: Engineering Division**

AND WHEN RECORDED MAIL DOCUMENT TO:

NAME **City Clerk: c/o _____**

STREET ADDRESS 9700 7th Avenue

CITY, STATE & ZIP CODE Hesperia, CA 92345

SPACE ABOVE FOR RECORDER'S USE ONLY

# COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN AND STORMWATER BEST MANAGEMENT PRACTICES TRANSFER, ACCESS AND MAINTENANCE

Title of Document

**Document exempt from recording fees pursuant to Cal. Gov. Code 6103 & 27383**

# THIS AREA FOR RECORDER'S USE ONLY

THIS COVER SHEET ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION

**Covenant and Agreement Regarding Water Quality Management Plan and Stormwater Best Management Practices Transfer, Access and Maintenance**

**OWNER NAME:** CARGO SOLUTIONS EXPRESS

**PROPERTY ADDRESS:** _____

_____

**APN:** 3064-591-12, 13 & 3064-631-01

**THIS AGREEMENT** is made and entered into in

CITY OF HESPERIA, COUNTY OF SAN BERNARDINO , California, this _____ day of

_____ , by and between

Doug Cox , hereinafter

referred to as Owner, and the CITY OF HESPERIA, a political subdivision of the State of California, hereinafter referred to as "the City";

**WHEREAS,** the Owner owns real property ("Property") in the State of California, County of San Bernardino, located at [STREET ADDRESS] within the City of Hesperia, more commonly referred to as San Bernardino County Tax Assessor Parcel No. [APN Number] specifically described in Exhibit "A" and depicted in Exhibit "B", each of which is attached hereto and incorporated herein by this reference; and

**WHEREAS,** at the time of initial approval of the development project known as

3064-591-12, 13 & 3064-631-01 within the Property described herein, the City required the project to employ Best Management Practices, hereinafter referred to as "BMPs," to minimize pollutants in urban runoff; and

**WHEREAS**, the Owner has chosen to install and/or implement BMPs as described in the Water Quality Management Plan, dated _____, on file with the City and incorporated herein by this reference, hereinafter referred to as "WQMP", to minimize pollutants in stormwater and urban runoff and to minimize other adverse impacts of stormwater and urban runoff; and

**WHEREAS,** said WQMP has been certified by the Owner and reviewed and approved by the City; and

**WHEREAS,** the Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of all BMPs in the WQMP and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining to confined space and waste disposal methods, in effect at the time such maintenance occurs.

**NOW THEREFORE**, it is mutually stipulated and agreed as follows:

1. Owner shall comply with the WQMP.

2. All maintenance or replacement of any BMPs specified within the approved WQMP is the sole responsibility of the Owner in accordance with the terms of this Agreement.

3. Owner hereby provides the City's designee complete access, of any duration, to the BMPs and their immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by the City, no advance notice, for the purpose of inspection, sampling, testing of the BMPs, and in case of emergency, to undertake all necessary repairs or other preventative measures at owner's expense as provided in paragraph 5 below. The City shall make every effort at all times to minimize or avoid interference with Owner's use of the Property. Denial of access to any premises or facility that contains WQMP features is a breach of this Agreement and may also be a violation of the Clean Water Act, the California Water Code, and/or the City's NPDES Permit Implementation regulations. If there is reasonable cause to believe that an illicit discharge or breach of this Agreement is occurring on the premises then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction in addition to other enforcement actions. Owner recognizes that the City may perform routine and regular inspections, as well as emergency inspections, of the BMPs. Owner or Owner's successors or assigns shall pay City for all costs incurred by City in the inspection, sampling, testing of the BMPs within thirty (30) calendar days of City invoice.

4. Owner shall use its best efforts diligently to maintain all BMPs in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of any material(s) from the BMPs and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested from time to time by the City, the Owner shall provide the City with documentation identifying the material(s) removed, the quantity, and disposal destination, testing construction or reconstruction.

5. In the event Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) business days of being given written notice by the City, the City is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense against the Property and/or to the Owner or Owner's successors or assigns, including administrative costs, attorney's fees and interest thereon at the maximum rate authorized by the City Code from the date of the notice of expense until paid in full. Owner or Owner's successors or assigns shall pay City within thirty (30) calendar days of City invoice.

6. The City may require the owner to post security in form and for a time period satisfactory to the City to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under the Agreement, the City may, in the case of a cash bond, act for the Owner using the proceeds from it, or in the case of a surety bond, require the surety (ies) to perform the obligations of this Agreement.

7. The City agrees, from time to time, within ten (10) business days after request of Owner, to execute and deliver to Owner, or Owner's designee, an estoppel certificate requested by Owner, stating that this Agreement is in full force and effect, and that Owner is not in default hereunder with regard to any maintenance or payment obligations (or specifying in detail the nature of Owner's default). Owner shall pay all costs and expenses incurred by the City in its investigation of whether to issue an estoppel certificate within thirty (30) calendar days after receipt of a City invoice and prior to the City's issuance of such certificate. Where the City cannot issue an estoppel certificate, Owner shall pay the City within thirty (30) calendar days of receipt of a City invoice.

8. Owner shall not change any BMPs identified in the WQMP without an amendment to this Agreement approved by authorized representatives of both the City and the Owner.

9. City and Owner shall comply with all applicable laws, ordinances, rules, regulations, court orders and government agency orders now or hereinafter in effect in carrying out the terms of this Agreement. If a provision of this Agreement is terminated or held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall remain in full effect.

10. In addition to any remedy available to City under this Agreement, if Owner violates any term of this Agreement and does not cure the violation within the time already provided in this Agreement, or, if not provided, within thirty (30) calendar days, or within such time authorized by the City if said cure reasonably requires more than the subject time, the City may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by the Owner with the terms of this Agreement. In such action, the City may recover any damages to which the City may be entitled for the violation, enjoin the violation by temporary or permanent injunction without the necessity of proving actual damages or the inadequacy of otherwise available legal remedies, or obtain other equitable relief, including, but not limited to, the restoration of the Property and/or the BMPs identified in the WQMP to the condition in which it/they existed prior to any such violation or injury.

11. This Agreement shall be recorded in the Office of the Recorder of San Bernardino County, California, at the expense of the Owner and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth, and also a lien in such amount as will fully reimburse the City, including interest as herein above set forth, subject to foreclosure in event of default in payment.

12. In event of legal action occasioned by any default or action of the Owner, or its successors or assigns, then the Owner and its successors or assigns agree(s) to hold the City harmless and pay all costs incurred by the City in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

13. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien there against.

14. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto. The term "Owner" shall include not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of

this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the City at the same time such notice is provided to the successor.

15. Time is of the essence in the performance of this Agreement.

16. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

17. Owner agrees to indemnify, defend (with counsel reasonably approved by the City) and hold harmless the City and its authorized officers, employees, agents and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person and for any costs or expenses incurred by the City on account of any claim except where such indemnification is prohibited by law. This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The Owner's indemnification obligation applies to the City's "active" as well as "passive" negligence but does not apply to the City's "sole negligence" or "willful misconduct" within the meaning of Civil Code Section 2782, or to any claims, actions, losses, damages, and/or liabilities, to the extent caused by the acts or omissions of any third party contractors undertaking any work (other than field inspections) or other maintenance on the Property on behalf of the City under this Agreement.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

**IF TO CITY:**

City of Hesperia

9700 Seventh Avenue

Hesperia, CA 92345

**IF TO OWNER:**

CARGO SOLUTIONS EXPRESS

14587 VALLEY BLVD

FONTANA, CA 92335

**IN WITNESS THEREOF,** the parties hereto have affixed their signatures as of the date first written above.

**OWNER:**
Signature: _____

Name: _____

Title: _____

Date: _____

**FOR:** Maintenance Agreement, dated _____, for the project known as

APN: 3064-591-12, 13 & 3064-631-01

As described in the WQMP dated _____.

**OWNER:**

Signature: _____

Name: _____

Title: _____

Date: _____

**NOTARIES ON FOLLOWING PAGE(S)**

A notary acknowledgement for each signature is required for recordation.

ACCEPTED BY:

Director of Development Services or designee

Date: _____

Attachment: Notary Acknowledgement

**ATTACHMENT 1**

**(Notary Acknowledgement)**

**ATTACHMENT 1, Page 2**

**(Notary Acknowledgement)**

**EXHIBIT A**

**(Legal Description)**

## LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A: (APN: 3064-591-17)

PARCEL 1 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

PARCEL B: (APN: 3064-591-18)

PARCEL 2 OF PARCEL MAP NO. 15322, IN THE CITY OF HESPERIA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 188 OF PARCEL MAPS, PAGE(S) 100 AND 101 RECORDS OF SAID COUNTY.

PARCEL C: (APN: 3064-591-12)

THE EAST 1/2 OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

PARCEL D: (APN: 3064-591-13)

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

TOGETHER WITH THAT PORTION AS VACATED BY THE CITY OF HESPERIA AND DESCRIBED IN THAT CERTAIN "RESOLUTION NO. 2007-037" RECORDED JUNE 04, 2007, AS INSTRUMENT NO. 2007-0333115, OF OFFICIAL RECORDS.

EXCEPT THEREFROM THOSE PORTIONS THEREOF CONVEYED TO THE STATE OF CALIFORNIA BY DEEDS RECORDED JULY 14, 1954 IN BOOK 3420, PAGE 390, OFFICIAL RECORDS AND RECORDED FEBRUARY 8, 1963 IN BOOK 5848, PAGE 800, OFFICIAL RECORDS.

PARCEL E: (APN: 3064-631-01)

THAT PORTION OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND ON FILE IN THE DISTRICT LAND OFFICE, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF SAID SOUTHWEST 1/4; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID SOUTHWEST 1/4 TO A LINE PARALLEL WITH AND DISTANT 14.00 FEET NORTHWESTERLY, MEASURED AT RIGHT ANGLES, FROM THE NORTHEASTERLY PROLONGATION OF THE NORTHWESTERLY LINE OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED FROM SIMON FRIEDMAN AND WIFE, RECORDED JANUARY 28, 1949, IN BOOK 2353, PAGE 423, OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE NORTHEASTERLY ALONG SAID PARALLEL LINE TO THE NORTHERLY LINE OF SAID SOUTHWEST 1/4; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

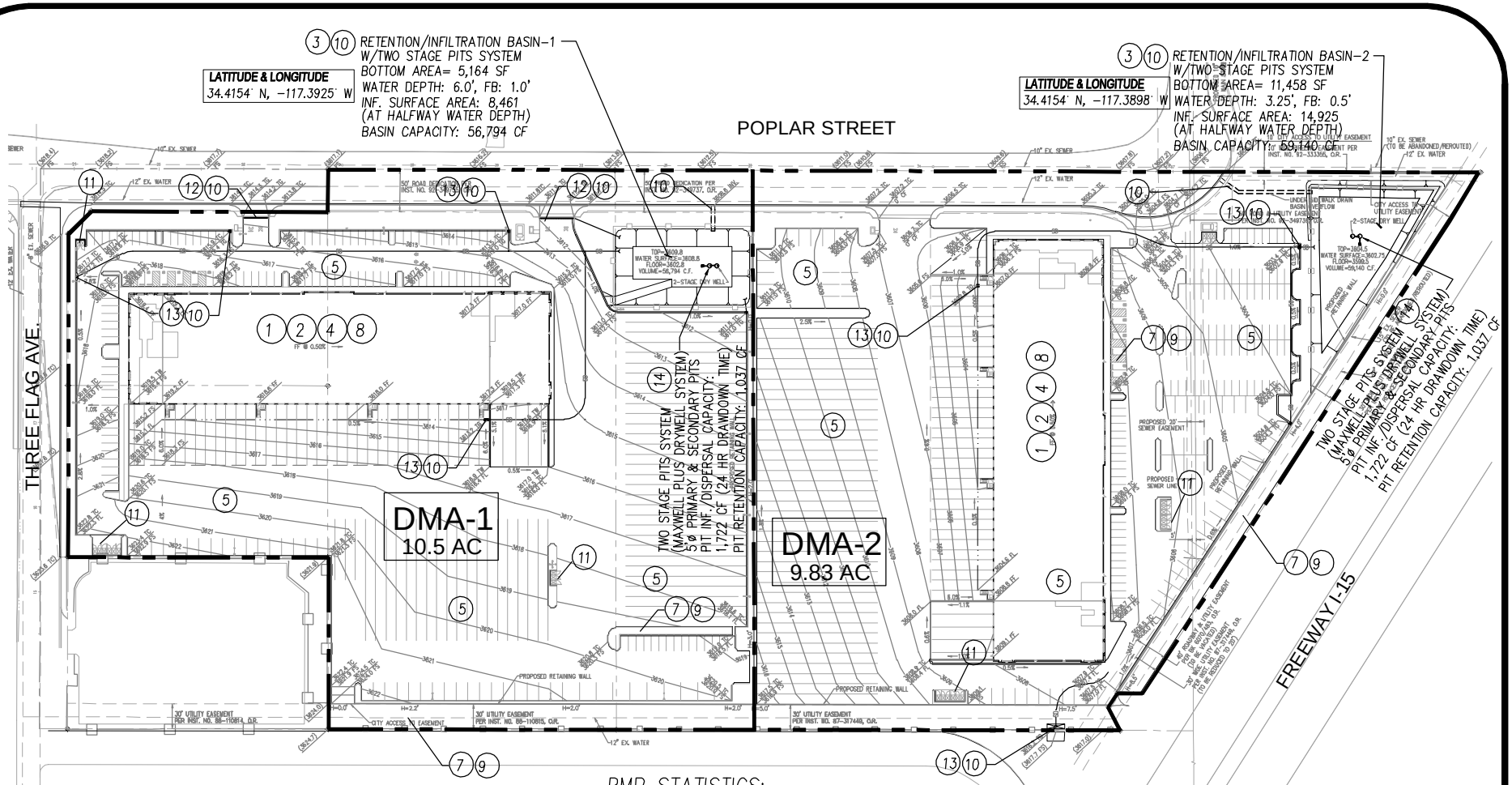
**EXHIBIT B**

**(Map/illustration)**




VICINITY MAP

NTS




## BMP LIST:

1. EDUCATION OF PROPERTY OWNERS (N1)
2. ACTIVITY RESTRICTIONS (N2)
3. INFILTRATION/RETENTION BASIN-1 WITH TWO STAGE PITS SYSTEM PER PLAN
4. TRAINING/EDUCATION PROGRAM (N12)
5. PARKING LOT SWEEPING/VACUUMING (N15)
6. COMMON AREA CATCH BASIN INSPECTION (N14)
7. LANDSCAPE PLANNING (N3)
8. ROOF RUNOFF CONTROLS (SD-11)
9. EFFICIENT IRRIGAION (S-4)
10. STORM DRAIN SIGNAGE (S-1)
11. TRASH STORAGE AREAS (N11)
12. TRENCH DRAIN FILTER INSERT -FLO-GARD INSERT FILTER
13. GRATE INLET FILTER INSERT- ADS FLEXSTORM PURE INLET FILTER OR APPROVED EQUAL (N14)
14. TWO-STAGE DRYWELL SYSTEM (MAXWELL PLUS DRYWELL SYSTEM)

## BMP STATISTICS:

| DMAs | AREA (AC) | BMP | BMP CAPACITY (CF) | REQUIRED VOLUME (CF) | PROVIDED VOLUME (CF) |
|---|---|---|---|---|---|
| DMA-1 | 10.5 | INF/RET BASIN-1 WITH TWO STAGE PITS SYSTEM | 57,831 | 30,956 | *57,831 |
| DMA-1 | 9.83 | INF/RET BASIN-2 WITH TWO STAGE PITS SYSTEM | 60,177 | 28,981 | *60,177 |
| DA-1: 20.33 AC | | | 118,008 CF | 59,937 CF | *118,008 CF |

*INCLUDED TWO-STAGE PIT RET. CAPACITY

N

SCALE: 1" = 200'


Prepared By:

ALLARD ENGINEERING

Civil Engineering - Land Surveying - Land Planning

16866 Seville Avenue

Fontana, California 92335

PHONE (909) 356-1815 Fax (909) 356-1795


Prepared For:

CARGO SOLUTIONS EXPRESS

14587 VALLEY BLVD.

FONTANA, CA 92335

PHONE: (909) 350-1644 ex 330

CITY OF HISPERIA, CALIFORNIA

# WQMP EXHIBIT

APN 3064-591-12, 13 & 3064-631-01

PLOT DATE: September 03, 2024 ashafiq

# Appendix: 6.4

# BMP Educational Materials

# STORMWATER Pollution Prevention

## PAINTING

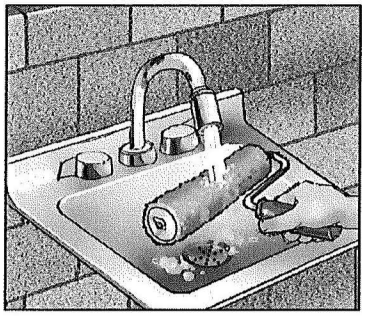
Paints, solvents, adhesives and other toxic chemicals used in painting often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these simple tips to prevent pollution and protect our health.



**Water-Based Paints**
Use water-based paints whenever possible. They are less toxic than oil-based paints and easier to clean up. Look for products labeled "latex" or "cleans with water."

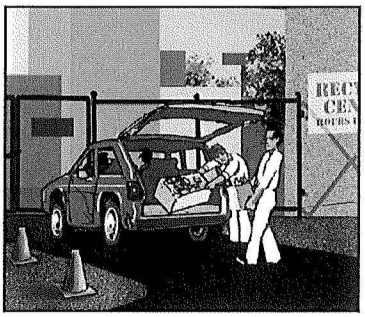


**Paint Removal**
Sweep up paint stripping residue, chips and dust instead of hosing into the street and dispose of them safely at a household hazardous waste collection facility. Call (800) CLEANUP for the facility in your area.



**Painting Cleanup**
Never clean brushes or rinse paint containers in the street, gutter or near a storm drain. Clean water-based paints in the sink. Clean oil-based paints with thinner, which can be reused by putting it in a jar to settle out the paint particles and then pouring off the clear liquid for future use. Wrap dried paint residue in newspaper and dispose of it in the trash.

**Exterior Paint Removal**
When stripping or cleaning building exteriors with high-pressure water, block nearby storm drains and divert washwater onto a designated dirt area. Ask your local wastewater treatment authority if you can collect building cleaning water and discharge it to the sewer.



**Recycling Paint**
Recycle leftover paint at a household hazardous waste collection facility, save it for touch ups or give it to someone who can use it, like a theatre group, school, city or community organization.



PUBLIC SERVICES
CITY OF FONTANA

To report illegal dumping or for more information on stormwater pollution prevention, call:

**1 (800) CLEANUP**

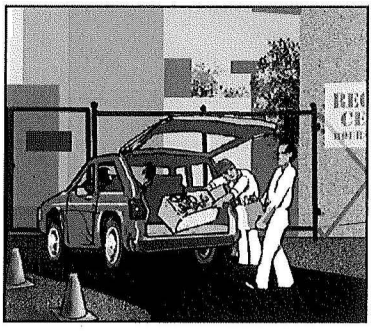
**www.1800cleanup.org**

San Bernardino County STORMWATER PROGRAM

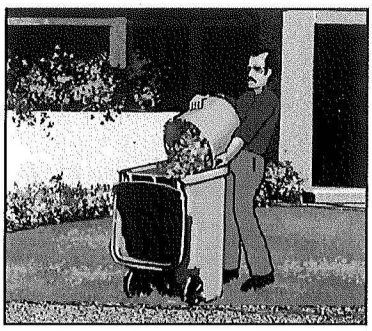
# STORMWATER Pollution Prevention

## HOME & GARDEN

Yard waste and household toxics like paints and pesticides often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these simple tips to prevent pollution and protect your health.



**Recycle Household Hazardous Waste**
Household products like paint, pesticides, solvents and cleaners are too dangerous to dump and too toxic to trash. Take them to be recycled at a convenient household hazardous waste collection facility. Call (800) CLEANUP for the facility in your area.



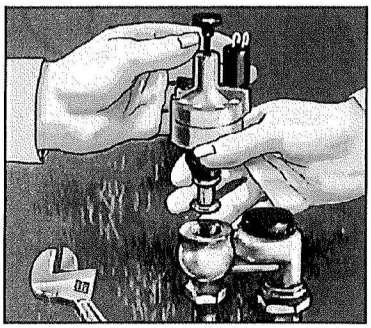
**Disposing of Yard Waste**
Recycle leaves, grass clippings and other yard waste, instead of blowing, sweeping or hosing into the street. Try grasscycling, leaving grass clippings on your lawn instead of using a grass catcher. The clippings act as a natural fertilizer, and because grass is mostly water, it also irrigates your lawn, conserving water.



**Use Fertilizers & Pesticides Safely**
Fertilizers and pesticides are often carried into the storm drain system by sprinkler runoff. Try using organic or non-toxic alternatives. If you use chemical fertilizers or pesticides, avoid applying near curbs and driveways and never apply before a rain.




**Planting in the Yard**
Produce less yard waste and save water by planting low maintenance, drought-tolerant trees and shrubs. Using drip irrigation, soaker hoses or micro-spray systems for flower beds and vegetation can also help reduce your water bill and prevent runoff.



**Use Water Wisely**
Cut your water costs and prevent runoff by controlling the amount of water and direction of sprinklers. The average lawn needs about an inch of water a week, including rainfall, or 10 to 20 minutes of watering. A half-inch per week is enough for fall and spring. Sprinklers should be on long enough to allow water to soak into the ground but not so long as to cause runoff.

PUBLIC SERVICES
CITY OF FONTANA

To report illegal dumping or for more information on stormwater pollution prevention, call:

**1 (800) CLEANUP**

**www.1800cleanup.org**

San Bernardino County STORMWATER PROGRAM

# Fertilizer Tips to Prevent Pollution

Water that runs off your lawn and garden can carry excess fertilizer into the San Bernardino County storm drain system, and it does not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these simple tips to prevent pollution and protect your health:



- Read the product label and follow the directions carefully, using only as directed.
- Avoid applying near driveways or gutters.
- Never apply fertilizer before a rain.
- Store fertilizers and chemicals in a covered area and in sealed, waterproof containers.
- Take unwanted lawn or garden chemicals to a household hazardous waste collection facility. Call (800) 253-2687.
- Use non-toxic products for your garden and lawn whenever possible.

To report illegal dumping or for more information on Stormwater pollution prevention, call:

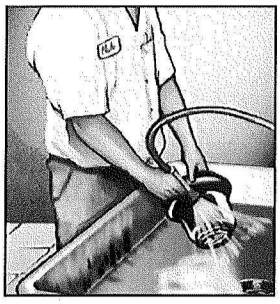
**1 (800) CLEANUP**

www.1800cleanup.org

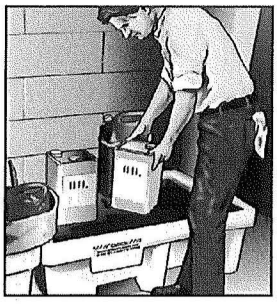
# STORMWATER Pollution Prevention

## AUTO MAINTENANCE

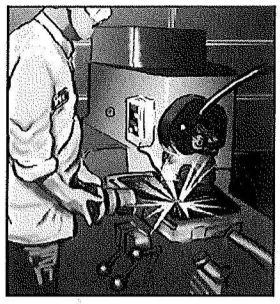
Oil, grease, anti-freeze and other toxic automotive fluids often make their way into the San Bernardino County storm drain system, and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



**Cleaning Auto Parts**
Scrape parts with a wire brush or use a bake oven rather than liquid cleaners. Arrange drip pans, drying racks and drain boards so that fluids are directed back into the parts washer or the fluid holding tank. Do not wash parts or equipment in a shop sink, parking lot, driveway or street.



**Storing Hazardous Waste**
Keep your liquid waste segregated. Many fluids can be recycled via hazardous waste disposal companies if they are not mixed. Store all materials under cover with spill containment or inside to prevent contamination of rainwater runoff.



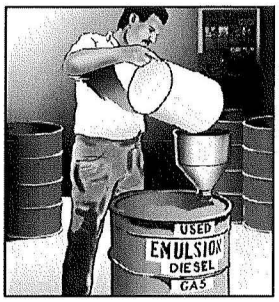
**Metal Grinding and Polishing**
Keep a bin under your lathe or grinder to capture metal filings. Send uncontaminated filings to a scrap metal recycler for reclamation. Store metal filings in a covered container or indoors.



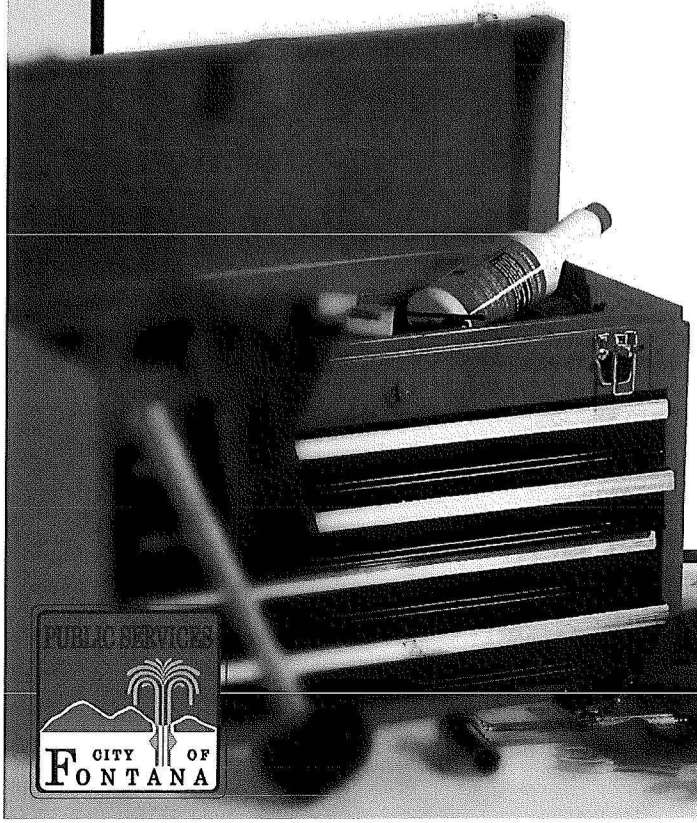
**Preventing Leaks and Spills**
Place drip pans underneath to capture fluids. Use absorbent cleaning agents instead of water to clean work areas.




**Cleaning Spills**
Use dry methods for spill cleanup (sweeping, absorbent materials). Follow your hazardous materials response plan, as filed with your local fire department or other hazardous materials authority. Be sure that all employees are aware of the plan and are capable of implementing each phase. To report serious toxic spills, call 911.




**Proper Disposal of Hazardous Waste**
Recycle used motor oil and oil filters, anti-freeze and other hazardous automotive fluids, batteries, tires and metal filings collected from grinding or polishing auto parts. Contact a licensed hazardous waste hauler. For more recycling information, call (909) 386-8401.



PUBLIC SERVICES
CITY OF FONTANA

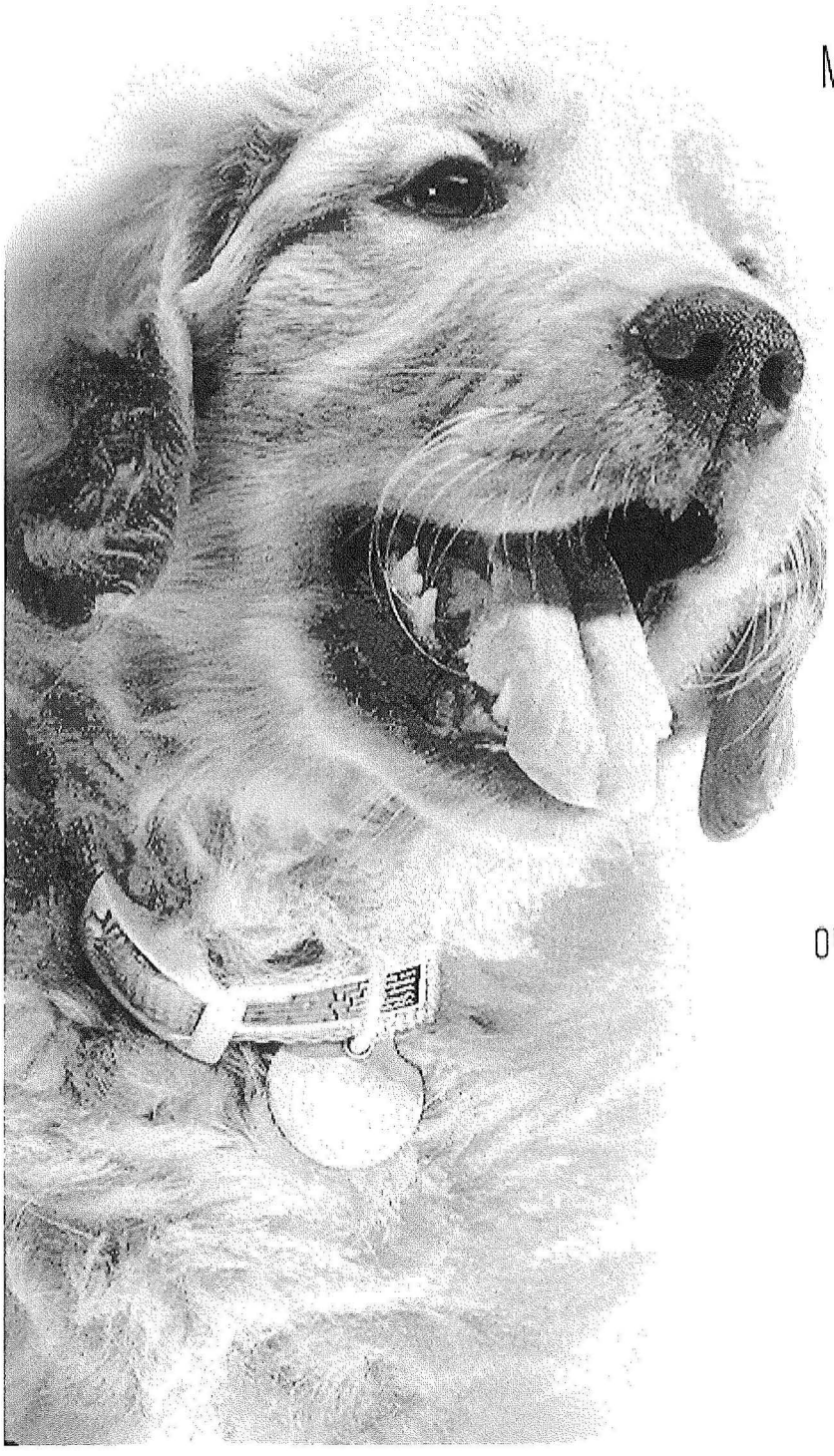
To report illegal dumping or for more information on stormwater pollution prevention, call:

**1 (800) CLEANUP**

**www.1800cleanup.org**

San Bernardino County STORMWATER PROGRAM

# Pick up after your pooch to curb pollution.



Maybe you weren't aware, but dog waste left on the ground gets into storm drains, polluting rivers, lakes and beaches.

The bacteria and risk of disease threatens the health of our kids and communities. Wherever you live in San Bernardino County, this pollution is a problem. The answer? Pick up after your dog, to help prevent pollution and protect our health. It's in your hands.

PUBLIC SERVICES
CITY OF FONTANA

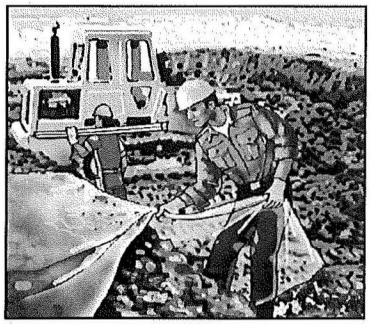
San Bernardino County
STORMWATER PROGRAM

♻ Printed on recycled paper

# STORMWATER Pollution Prevention

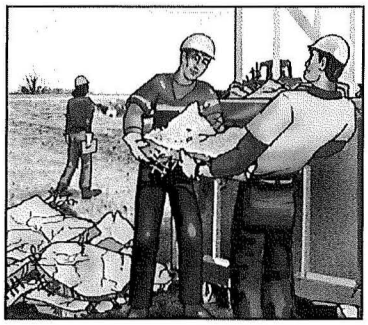
## FRESH CONCRETE & MORTAR APPLICATION

Cement wash, sediment, vehicle fluids, dust and hazardous debris from construction sites often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



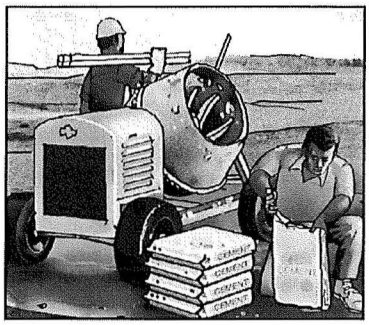
### Storing Materials

Keep construction materials and debris away from the street, gutter and storm drains. Secure open bags of cement and cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.



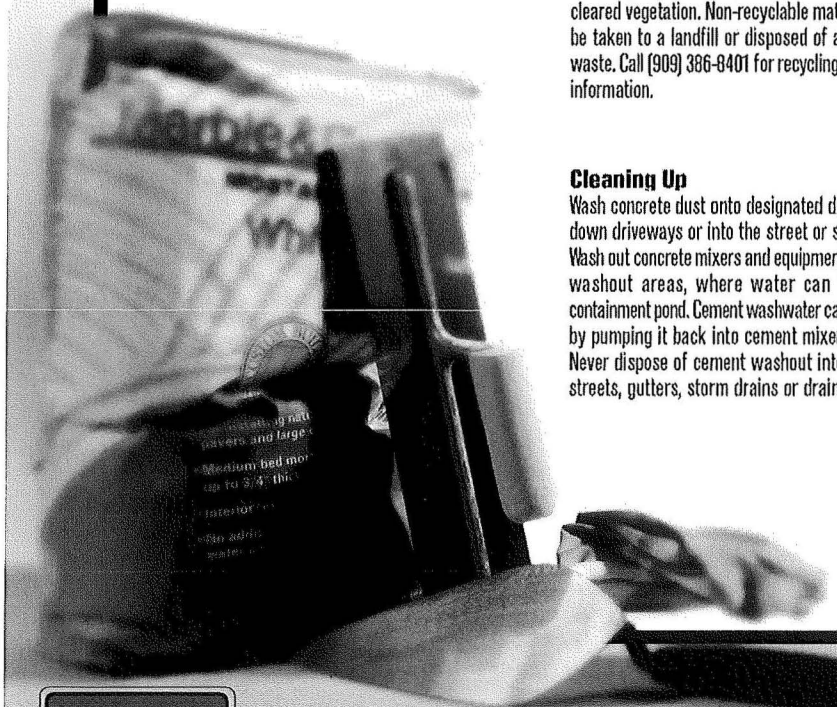
### Ordering Materials & Recycling Waste

Reduce waste by ordering only the amounts of materials needed for the job. Use recycled or recyclable materials whenever possible. When breaking up paving, recycle the pieces at a crushing company. You can also recycle broken asphalt, concrete, wood, and cleared vegetation. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. Call (909) 386-8401 for recycling and disposal information.



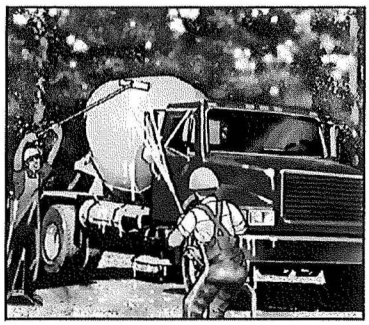

### During Construction

Schedule excavation and grading during dry weather. Prevent mortar and cement from entering the street and storm drains by placing erosion controls. Setup small mixers on tarps or drop cloths, for easy cleanup of debris. Never bury waste material. Recycle or dispose of it as hazardous waste.



### Cleaning Up

Wash concrete dust onto designated dirt areas, not down driveways or into the street or storm drains. Wash out concrete mixers and equipment in specified washout areas, where water can flow into a containment pond. Cement washwater can be recycled by pumping it back into cement mixers for reuse. Never dispose of cement washout into driveways, streets, gutters, storm drains or drainage ditches.



PUBLIC SERVICES
CITY OF FONTANA

To report illegal dumping or for more information on stormwater pollution prevention, call:

**1 (800) CLEANUP**

**www.1800cleanup.org**

San Bernardino County STORMWATER PROGRAM

# STORMWATER Pollution Prevention

## HOME REPAIR & REMODELING

Paints, solvents, adhesives and other toxic substances used in home repair and remodeling often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these simple tips to prevent pollution and protect your health.



### Construction Projects

Keep construction debris away from the street, gutter and storm drains. Schedule grading and excavation projects for dry weather. Cover excavated material and stockpiles of soil, sand or gravel, protected from rain, wind and runoff. Prevent erosion by planting fast-growing annual and perennial grass, which can shield and bind soil.

### Recycle Household Hazardous Waste

Household cleaners, paint and other home improvement products like wallpaper and tile adhesives are too toxic to trash. Recycle them instead, at a convenient household hazardous waste collection facility. Call (800) CLEANUP for the facility in your area.

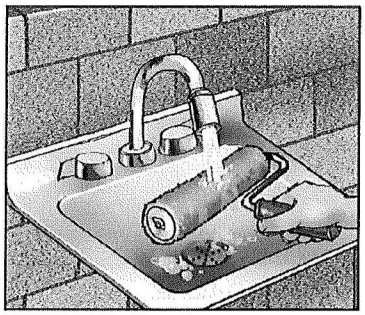


### Landscaping & Gardening

Avoid applying fertilizers or pesticide near curbs and driveways, and store covered, protected from rain, wind and runoff. Try using organic or non-toxic alternatives. Reduce runoff and lower your water bill by using drip irrigation, soaker hoses or micro-spray systems. Recycle leaves instead of blowing, sweeping or raking them into the street, gutter or storm drain.

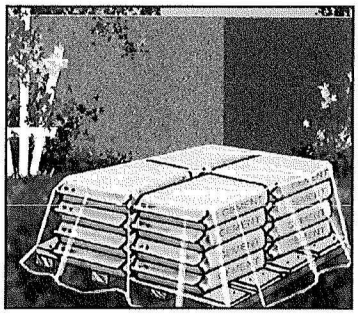
### Paint Removal

Paint stripping residue, chips and dust from marine paints and paints containing lead or tributyl tin are hazardous wastes. Sweep them up instead of hosing into the street and dispose of them safely at a household hazardous waste collection facility.



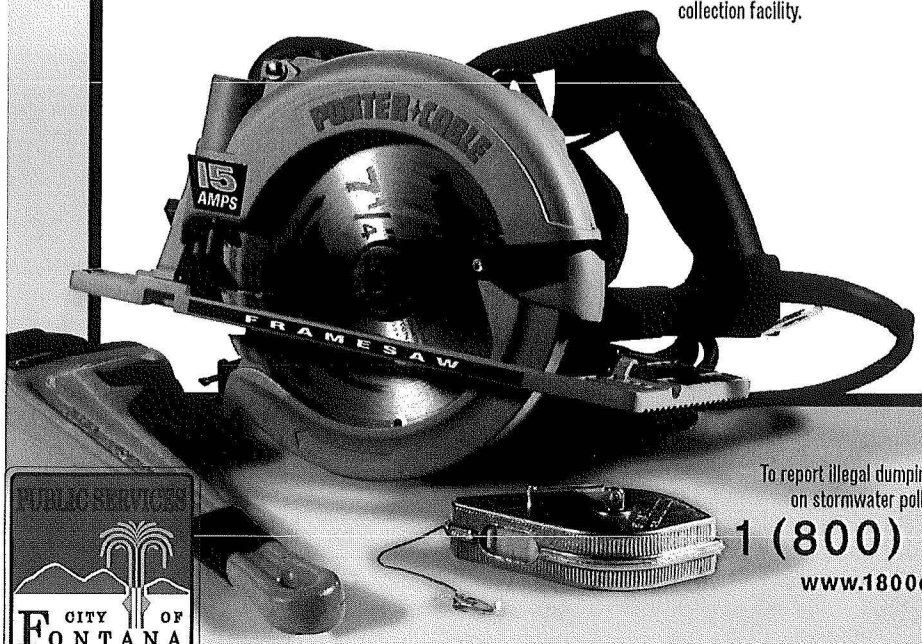
### Painting Cleanup

Avoid cleaning brushes or rinsing paint containers in the street, gutter or near a storm drain. Clean water-based paints in the sink. Clean oil-based paints with thinner, which you can filter and reuse. Recycle leftover paint at a household hazardous waste collection facility, save it for touch ups or give it to someone who can use it, like a theatre group, school, city or community organization.



### Concrete and Masonry

Store bags of cement and plaster away from gutters and storm drains, and cover them to protect against rain, wind and runoff. Sweep or scoop up cement washout or concrete dust instead of hosing into driveways, streets, gutters or storm drains.




PUBLIC SERVICES
CITY OF FONTANA

To report illegal dumping or for more information on stormwater pollution prevention, call:

**1 (800) CLEANUP**

www.1800cleanup.org

San Bernardino County STORMWATER PROGRAM

# BMP Fact Sheets

# Infiltration Basin TC-11




## Design Considerations

- Soil for Infiltration
- Slope
- Aesthetics

## Targeted Constituents

| | | |
|---|---|---|
| ☑ | Sediment | ■ |
| ☑ | Nutrients | ■ |
| ☑ | Trash | ■ |
| ☑ | Metals | ■ |
| ☑ | Bacteria | ■ |
| ☑ | Oil and Grease | ■ |
| ☑ | Organics | ■ |

**Legend** ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

## Description

An infiltration basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration basins use the natural filtering ability of the soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems. Infiltration basins can be challenging to apply on many sites, however, because of soils requirements. In addition, some studies have shown relatively high failure rates compared with other management practices.

## California Experience

Infiltration basins have a long history of use in California, especially in the Central Valley. Basins located in Fresno were among those initially evaluated in the National Urban Runoff Program and were found to be effective at reducing the volume of runoff, while posing little long-term threat to groundwater quality (EPA, 1983; Schroeder, 1995). Proper siting of these devices is crucial as underscored by the experience of Caltrans in siting two basins in Southern California. The basin with marginal separation from groundwater and soil permeability failed immediately and could never be rehabilitated.

## Advantages

- Provides 100% reduction in the load discharged to surface waters.
- The principal benefit of infiltration basins is the approximation of pre-development hydrology during which a

significant portion of the average annual rainfall runoff is infiltrated and evaporated rather than flushed directly to creeks.

- If the water quality volume is adequately sized, infiltration basins can be useful for providing control of channel forming (erosion) and high frequency (generally less than the 2-year) flood events.

### Limitations

- May not be appropriate for industrial sites or locations where spills may occur.
- Infiltration basins require a minimum soil infiltration rate of 0.5 inches/hour, not appropriate at sites with Hydrologic Soil Types C and D.
- If infiltration rates exceed 2.4 inches/hour, then the runoff should be fully treated prior to infiltration to protect groundwater quality.
- Not suitable on fill sites or steep slopes.
- Risk of groundwater contamination in very coarse soils.
- Upstream drainage area must be completely stabilized before construction.
- Difficult to restore functioning of infiltration basins once clogged.

### Design and Sizing Guidelines

- Water quality volume determined by local requirements or sized so that 85% of the annual runoff volume is captured.
- Basin sized so that the entire water quality volume is infiltrated within 48 hours.
- Vegetation establishment on the basin floor may help reduce the clogging rate.

#### *Construction/Inspection Considerations*

- Before construction begins, stabilize the entire area draining to the facility. If impossible, place a diversion berm around the perimeter of the infiltration site to prevent sediment entrance during construction or remove the top 2 inches of soil after the site is stabililized. Stabilize the entire contributing drainage area, including the side slopes, before allowing any runoff to enter once construction is complete.
- Place excavated material such that it can not be washed back into the basin if a storm occurs during construction of the facility.
- Build the basin without driving heavy equipment over the infiltration surface. Any equipment driven on the surface should have extra-wide ("low pressure") tires. Prior to any construction, rope off the infiltration area to stop entrance by unwanted equipment.
- After final grading, till the infiltration surface deeply.
- Use appropriate erosion control seed mix for the specific project and location.

### Performance

As water migrates through porous soil and rock, pollutant attenuation mechanisms include precipitation, sorption, physical filtration, and bacterial degradation. If functioning properly, this approach is presumed to have high removal efficiencies for particulate pollutants and moderate removal of soluble pollutants. Actual pollutant removal in the subsurface would be expected to vary depending upon site-specific soil types. This technology eliminates discharge to surface waters except for the very largest storms; consequently, complete removal of all stormwater constituents can be assumed.

There remain some concerns about the potential for groundwater contamination despite the findings of the NURP and Nightingale (1975; 1987a,b,c; 1989). For instance, a report by Pitt et al. (1994) highlighted the potential for groundwater contamination from intentional and unintentional stormwater infiltration. That report recommends that infiltration facilities not be sited in areas where high concentrations are present or where there is a potential for spills of toxic material. Conversely, Schroeder (1995) reported that there was no evidence of groundwater impacts from an infiltration basin serving a large industrial catchment in Fresno, CA.

### Siting Criteria

The key element in siting infiltration basins is identifying sites with appropriate soil and hydrogeologic properties, which is critical for long term performance. In one study conducted in Prince George's County, Maryland (Galli, 1992), all of the infiltration basins investigated clogged within 2 years. It is believed that these failures were for the most part due to allowing infiltration at sites with rates of less than 0.5 in/hr, basing siting on soil type rather than field infiltration tests, and poor construction practices that resulted in soil compaction of the basin invert.

A study of 23 infiltration basins in the Pacific Northwest showed better long-term performance in an area with highly permeable soils (Hilding, 1996). In this study, few of the infiltration basins had failed after 10 years. Consequently, the following guidelines for identifying appropriate soil and subsurface conditions should be rigorously adhered to.

- Determine soil type (consider RCS soil type 'A, B or C' only) from mapping and consult USDA soil survey tables to review other parameters such as the amount of silt and clay, presence of a restrictive layer or seasonal high water table, and estimated permeability. The soil should not have more than 30% clay or more than 40% of clay and silt combined. Eliminate sites that are clearly unsuitable for infiltration.

- Groundwater separation should be at least 3 m from the basin invert to the measured ground water elevation. There is concern at the state and regional levels of the impact on groundwater quality from infiltrated runoff, especially when the separation between groundwater and the surface is small.

- Location away from buildings, slopes and highway pavement (greater than 6 m) and wells and bridge structures (greater than 30 m). Sites constructed of fill, having a base flow or with a slope greater than 15% should not be considered.

- Ensure that adequate head is available to operate flow splitter structures (to allow the basin to be offline) without ponding in the splitter structure or creating backwater upstream of the splitter.

- Base flow should not be present in the tributary watershed.

***Secondary Screening Based on Site Geotechnical Investigation***

- At least three in-hole conductivity tests shall be performed using USBR 7300-89 or Bouwer-Rice procedures (the latter if groundwater is encountered within the boring), two tests at different locations within the proposed basin and the third down gradient by no more than approximately 10 m. The tests shall measure permeability in the side slopes and the bed within a depth of 3 m of the invert.

- The minimum acceptable hydraulic conductivity as measured in any of the three required test holes is 13 mm/hr. If any test hole shows less than the minimum value, the site should be disqualified from further consideration.

- Exclude from consideration sites constructed in fill or partially in fill unless no silts or clays are present in the soil boring. Fill tends to be compacted, with clays in a dispersed rather than flocculated state, greatly reducing permeability.

- The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move in the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

**Additional Design Guidelines**

(1) Basin Sizing - The required water quality volume is determined by local regulations or sufficient to capture 85% of the annual runoff.

(2) Provide pretreatment if sediment loading is a maintenance concern for the basin.

(3) Include energy dissipation in the inlet design for the basins. Avoid designs that include a permanent pool to reduce opportunity for standing water and associated vector problems.

(4) Basin invert area should be determined by the equation:

$$A = \frac{WQV}{kt}$$

where A = Basin invert area ($m^2$)

WQV = water quality volume ($m^3$)

k = 0.5 times the lowest field-measured hydraulic conductivity (m/hr)

t = drawdown time ( 48 hr)

(5) The use of vertical piping, either for distribution or infiltration enhancement shall not be allowed to avoid device classification as a Class V injection well per 40 CFR146.5(e)(4).

### Maintenance

Regular maintenance is critical to the successful operation of infiltration basins. Recommended operation and maintenance guidelines include:

- Inspections and maintenance to ensure that water infiltrates into the subsurface completely (recommended infiltration rate of 72 hours or less) and that vegetation is carefully managed to prevent creating mosquito and other vector habitats.
- Observe drain time for the design storm after completion or modification of the facility to confirm that the desired drain time has been obtained.
- Schedule semiannual inspections for beginning and end of the wet season to identify potential problems such as erosion of the basin side slopes and invert, standing water, trash and debris, and sediment accumulation.
- Remove accumulated trash and debris in the basin at the start and end of the wet season.
- Inspect for standing water at the end of the wet season.
- Trim vegetation at the beginning and end of the wet season to prevent establishment of woody vegetation and for aesthetic and vector reasons.
- Remove accumulated sediment and regrade when the accumulated sediment volume exceeds 10% of the basin.
- If erosion is occurring within the basin, revegetate immediately and stabilize with an erosion control mulch or mat until vegetation cover is established.
- To avoid reversing soil development, scarification or other disturbance should only be performed when there are actual signs of clogging, rather than on a routine basis. Always remove deposited sediments before scarification, and use a hand-guided rotary tiller, if possible, or a disc harrow pulled by a very light tractor.

### Cost

Infiltration basins are relatively cost-effective practices because little infrastructure is needed when constructing them. One study estimated the total construction cost at about $2 per ft (adjusted for inflation) of storage for a 0.25-acre basin (SWRPC, 1991). As with other BMPs, these published cost estimates may deviate greatly from what might be incurred at a specific site. For instance, Caltrans spent about $18/ft$^3$ for the two infiltration basins constructed in southern California, each of which had a water quality volume of about 0.34 ac.-ft. Much of the higher cost can be attributed to changes in the storm drain system necessary to route the runoff to the basin locations.

Infiltration basins typically consume about 2 to 3% of the site draining to them, which is relatively small. Additional space may be required for buffer, landscaping, access road, and fencing. Maintenance costs are estimated at 5 to 10% of construction costs.

One cost concern associated with infiltration practices is the maintenance burden and longevity. If improperly maintained, infiltration basins have a high failure rate. Thus, it may be necessary to replace the basin with a different technology after a relatively short period of time.

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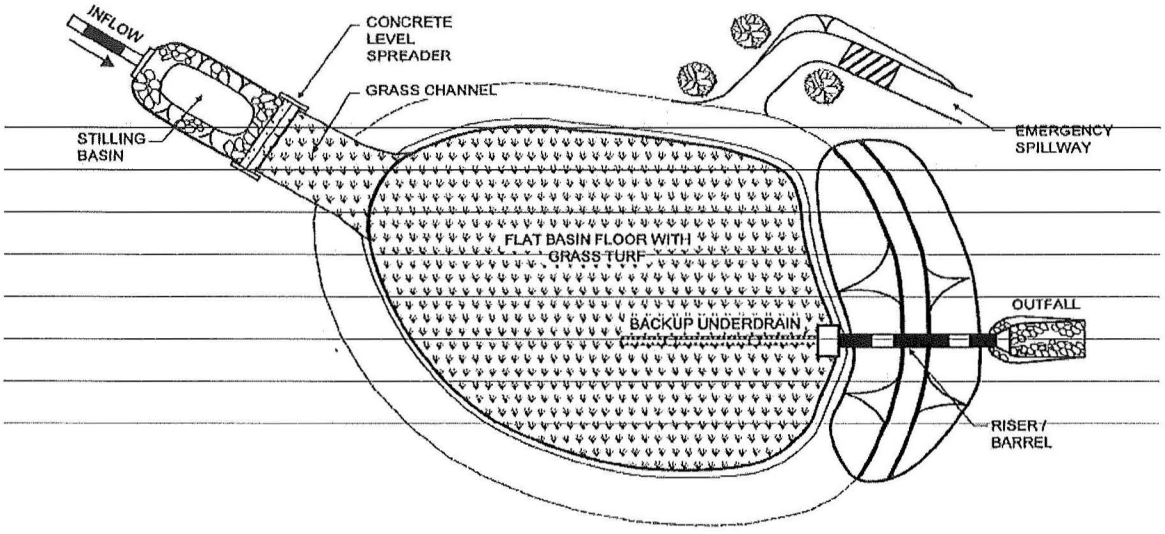
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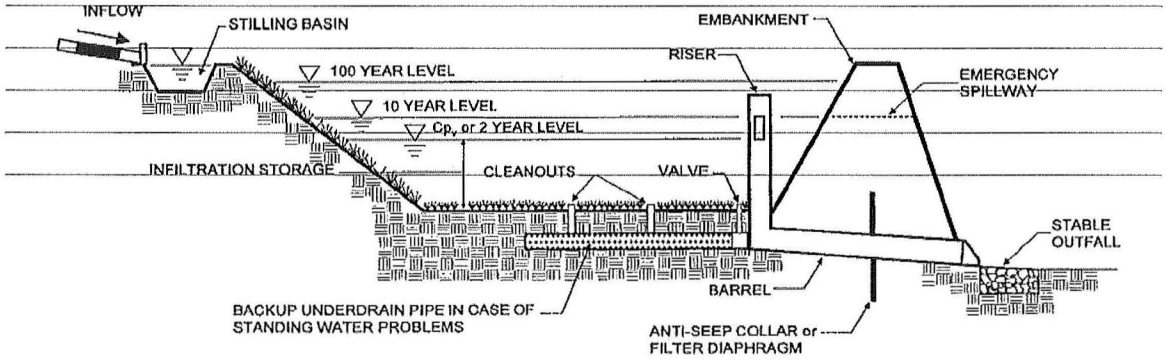
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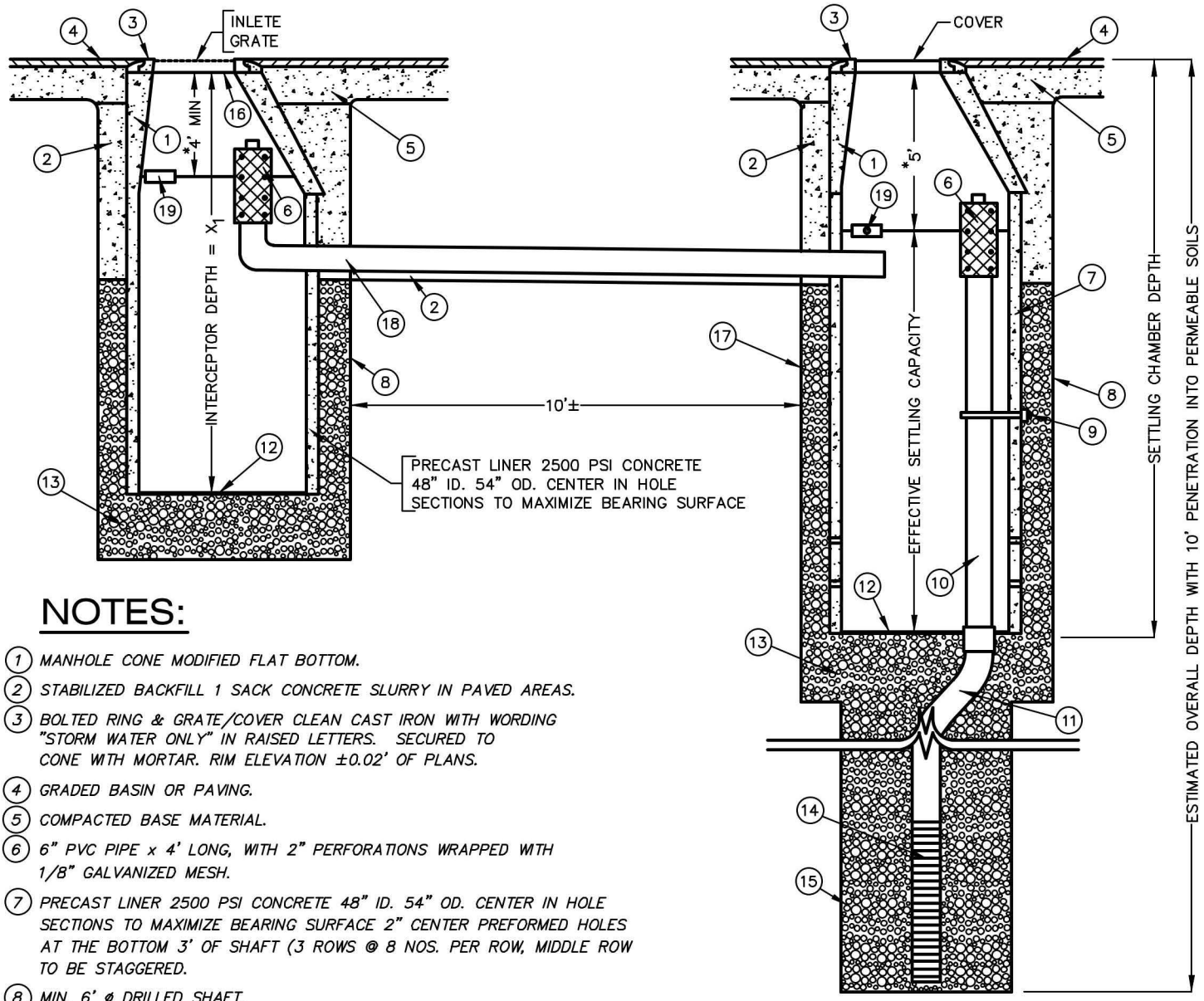



PLAN VIEW




PROFILE

# DRAINAGE SYSTEM DETAIL AND SPECIFICATION




## NOTES:

(1) MANHOLE CONE MODIFIED FLAT BOTTOM.

(2) STABILIZED BACKFILL 1 SACK CONCRETE SLURRY IN PAVED AREAS.

(3) BOLTED RING & GRATE/COVER CLEAN CAST IRON WITH WORDING "STORM WATER ONLY" IN RAISED LETTERS. SECURED TO CONE WITH MORTAR. RIM ELEVATION ±0.02' OF PLANS.

(4) GRADED BASIN OR PAVING.

(5) COMPACTED BASE MATERIAL.

(6) 6" PVC PIPE x 4' LONG, WITH 2" PERFORATIONS WRAPPED WITH 1/8" GALVANIZED MESH.

(7) PRECAST LINER 2500 PSI CONCRETE 48" ID. 54" OD. CENTER IN HOLE SECTIONS TO MAXIMIZE BEARING SURFACE 2" CENTER PREFORMED HOLES AT THE BOTTOM 3' OF SHAFT (3 ROWS @ 8 NOS. PER ROW, MIDDLE ROW TO BE STAGGERED.

(8) MIN. 6' ø DRILLED SHAFT.

(9) SUPPORT BRACKET FORMED 12 GA. STEEL. FUSION BONDED EPOXY COATED.

(10) 6" OVERFLOW PIPE SCH 40 PVC. MATED TO DRAINAGE BELOW BASE SEAL.

(11) DRAINAGE PIPE ADS HIGHWAY GRADE WITH MDI–A COUPLER. (OR APPROVED EQUAL) SUSPEND PIPE DURING BACKFILL OPERATIONS TO PREVENT BUCKLING OR BREAKAGE. MINIMUM PIPE SIZE TO BE 8" DIAMETER

(12) BASE SEAL – GEOTEXTILE, POLY LINER OR CONCRETE SLURRY.

(13) ROCK CLEAN AND WASHED, SIZED BETWEEN 3/4" AND 1–1/2" TO BEST COMPLEMENT SOIL CONDITIONS.

(14) 6–INCH CORRUGATED PERFORATED POLYETHYLENE (ADS OR APPROVED EQUAL).

(15) MIN. 4' ø SHAFT DRILLED TO MAINTAIN PERMEABILITY OF DRAINAGE SOILS.

(16) FABRIC SEAL UV RESISTANT GEOTEXTILE TO BE REMOVED BY CUSTOMER AT PROJECT COMPLETION

(17) 2–STAGE PIT IS TO BE USED FOR COMMERCIAL DEVELOPMENT ONLY.

(18) CONNECTOR PIPE 6" ø SCH 40 PVC

(19) ABSORBENT HYDROPHOBIC PETRO CHEMICAL SPONGE MIN. 100 OZ. CAPACITY.

*FREEBOARD DEPTH VARIES WITH INLET PIPE ELEVATION. INCREASE INTERCEPTOR/ SETTLING CHAMBER DEPTH AS NEEDED TO MAINTAIN ALL INLET PIPE ELEVATIONS ABOVE CONNECTOR PIPE OVERFLOW.

$X_1$ = 10' MAXIMUM

## NOTE:

A SOILS INVESTIGATION SHALL BE PERFORMED BY A REGISTERED SOILS ENGINEER TO ENSURE THAT THE SEEPAGE PIT WILL HAVE ADEQUATE PERCOLATION.

| | | | | |
|---|---|---|---|---|
| DRAWN BY: M.W.M. | CITY OF HESPERIA | | REV. DATE | STD. DRW'G. NO. |
| APPROVED BY: | 2 STAGE SEEPAGE PITS | | | SP-1 |
| DATE: 8/20/13 | | | | |

*The watermark for drainage solutions.®*

TORRENT RESOURCES

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- Geologic Database
- ADEQ Drywell Registration

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- Injection Wells & Galleries

***Environmental Applications***
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- Drainage Rehabilitation
- Drywell Abandonments
- OSHA HAZMAT-Certified

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- Problem Assessment
- Site Redesign/Modification
- System Retrofit

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- Service Contracts
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ROC047067 B-4; ADWR 363

**CA Lic.** 528080 A, C-42, HAZ

**NV Lic.** 0035350 A

**NM Lic.** 90504 GF04

## TORRENT RESOURCES (CA) INCORPORATED

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An evolution of McGuckin Drilling

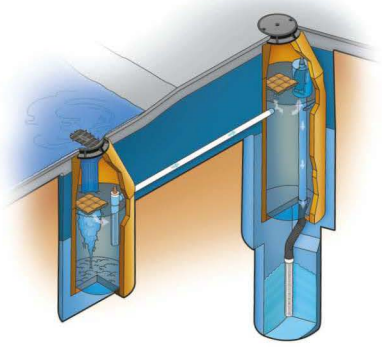

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# *MaxWell® Plus* DRAINAGE SYSTEM

*Product Information and Design Features*

TORRENT RESOURCES

The ***MaxWell® Plus,*** as manufactured and installed exclusively by Torrent Resources Incorporated, is the industry standard for draining large paved surfaces, nuisance water and other demanding applications. This patented system incorporates state-of-the-art pre-treatment technology.



## THE ULTIMATE IN DESIGN

Since 1974, nearly 65,000 MaxWell® Systems have proven their value as a cost-effective solution in a wide variety of drainage applications. They are accepted by state and municipal agencies and are a standard detail in numerous drainage manuals. Many municipalities have recognized the inherent benefits of the MaxWell Plus and now require it for drainage of all paved surfaces.

## SUPERIOR PRE-TREATMENT

Industry research, together with Torrent Resources' own experience, have shown that initial storm drainage flows have the greatest impact on system performance. This "first flush" occurs during the first few minutes of runoff, and carries the majority of sediment and debris. Larger paved surfaces or connecting pipes from catch basins, underground storage, etc. can also generate high peak flows which may strain system function. In addition, nuisance water flows require controlled processing separate from normal storm runoff demands.

Manufactured and Installed Exclusively by Torrent Resources Incorporated
Please see reverse side for additional information
U.S. Patent No. 4,923,330

In the ***MaxWell® Plus,*** preliminary treatment is provided through collection and separation in deep large-volume settling chambers. The standard MaxWell Plus System has over 2,500 gallons of capacity to contain sediment and debris carried by incoming water. Floating trash, paper, pavement oil, etc. are effectively stopped by the **PureFlo®** Debris Shields in each chamber. These shielding devices are equipped with an effective screen to filter suspended material and are vented to prevent siphoning of floating surface debris as the system drains.

## EFFECTIVE PROCESSING

Incoming water from the surface grated inlets or connecting pipes is received in the Primary Settling Chamber where silt and other heavy particles settle to the bottom. A PureFlo Debris Shield ensures containment by trapping floating debris and pavement oil. The pre-treated flow is then regulated to a design rate of up to 0.25cfs and directed to a Secondary Settling Chamber. The settling and containment process is repeated, thereby effectively achieving controlled, uniform treatment. The system is drained as water rises under the PureFlo Debris Shield and spills into the top of the overflow pipe. The drainage assembly returns the cleaned water into the surrounding soil through the **FloFast®** Drainage Screen.

## ABSORBENT TECHNOLOGY

Both MaxWell Plus settling chambers are equipped with absorbent sponges to provide prompt removal of pavement oils. These floating pillow-like devices are 100% water repellent and literally wick petrochemical compounds from the water. Each sponge has a capacity of up to 128 ounces to accommodate effective, long-term treatment. The absorbent is completely inert and will safely remove runoff constituents down to rainbow sheens that are typically no more than one molecule thick.

## SECURITY FEATURES

MaxWell Plus Systems include bolted, theft-deterrent, cast iron gratings and covers as standard security features. Special inset castings which are resistant to loosening from accidental impact are available for use in landscaped applications. Machined mating surfaces and "Storm Water Only" wording are standard.

## THE MAXWELL FIVE-YEAR WARRANTY

*Innovative engineering, quality materials and exacting construction are standard with every MaxWell System designed, manufactured and installed by Torrent Resources Incorporated. The MaxWell Drainage Systems Warranty is the best in the industry and guarantees against failures due to workmanship or materials for a period of five years from date of completion.*

## MAXWELL® PLUS DRAINAGE SYSTEM DETAIL AND SPECIFICATIONS

### CALCULATING MAXWELL PLUS REQUIREMENTS:

The type of property, soil permeability, rainfall intensity and local drainage ordinances determine the number and design of MaxWell Systems. For general applications draining retained stormwater, use one standard ***MaxWell® Plus*** per the instructions below for up to 5 acres of landscaped contributory area, and up to 2 acres of paved surface. To drain nuisance water flows in storm runoff systems, add a remote inlet to the system. For smaller drainage needs, refer to our ***MaxWell® IV***. For industrial drainage, our ***Envibro® System*** may be recommended. For additional considerations, please refer to **"Design Suggestions For Retention And Drainage Systems"** or consult our Design Staff.

### COMPLETING THE MAXWELL PLUS DRAWING

To apply the MaxWell Plus drawing to your specific project, simply fill in the blue boxes per the following instructions. For assistance, please consult our Design Staff.

**PRIMARY SETTLING CHAMBER DEPTH**

The overall depth of the Primary Settling Chamber is determined by the amount of surface area being drained. Use a standard depth of **15 feet** for the initial acre of contributory drainage area, **plus 2 feet** for each additional acre, up to the design limits of the property type noted in "Calculating MaxWell Plus Requirements" noted above. Other conditions that would require increased chamber depths are property usage, maintenance scheduling, and severe or unusual service conditions. Connecting pipe depth may dictate deeper chambers so as to maintain the effectiveness of the settling process. Maximum chamber depth is 25 feet. A pump and lift station is recommended for systems with deeper requirements.

**ESTIMATED TOTAL DEPTH**

The Estimated Total Depth is the approximate total system depth required to achieve 10 continuous feet of penetration into permeable soils, based upon known soil information. Torrent utilizes specialized **"crowd"** equipped rigs to get through the difficult cemented soil and to reach clean drainage soils at depths up to **180 feet.** An extensive drilling log database is available to use as a reference.

**SETTLING CHAMBER DEPTH**

On MaxWell Plus Systems of over 30 feet overall depth and up to 0.25cfs design rate, the standard Settling Chamber Depth is **18 feet.** Maximum chamber depth is 25 feet.

**OVERFLOW HEIGHT**

The Overflow Height and Secondary Settling Chamber Depth determine the effectiveness of the settling process. The higher the overflow pipe, the deeper the chamber, the greater the settling capacity. An overflow height of **13 feet** is used with the standard settling chamber depth of **18 feet.**

**DRAINAGE PIPE**

This dimension also applies to the **PureFlo®** Debris Shields, the **FloFast®** Drainage Screen, and fittings. The size is based upon system design rates, multiple primary settling chambers, soil conditions, and need for adequate venting. Choices are 6", 8", or 12" diameter. Refer to our company's **"Design Suggestions for Retention and Drainage Systems"** for recommendations on which size best matches your application.

**BOLTED RING & GRATE/COVER**

Standard models are quality cast iron and available to fit 24" Ø or 30" Ø manhole openings. All units are bolted in two locations with wording "Storm Water Only" in raised letters. For other surface treatments, please refer to "Design Suggestions for Retention and Drainage Systems."

**INLET PIPE INVERT**

Pipes up to 12" in diameter from catch basins, underground storage, etc. may be connected into the primary settling chamber. Larger pipe diameters dictate the use of manhole material for the primary setting chamber with 48" grates on the cone.Inverts deeper than 5 feet will require additional depth in both system settling chambers to maintain respective effective settling capacities.

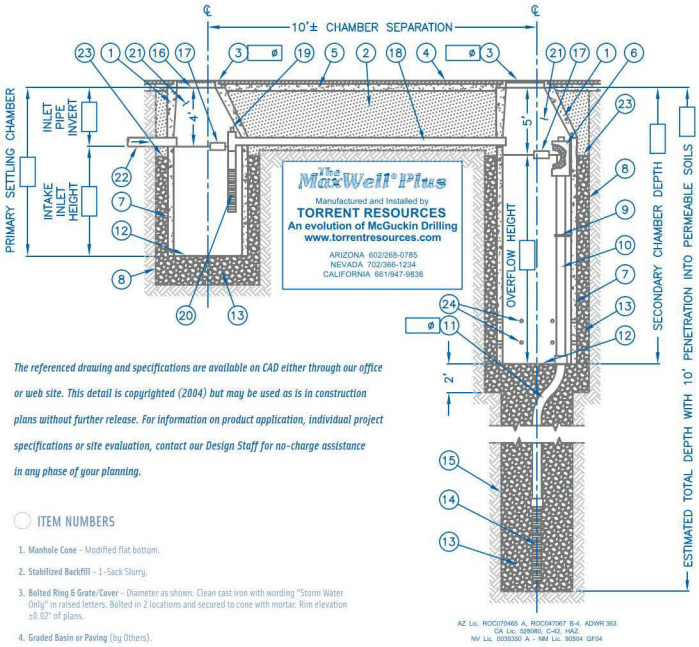
**INTAKE INLET HEIGHT**

The Intake Inlet Height determines the effectiveness of the settling process in the Primary Settling Chamber. A minimum inlet height of **11 feet** is used with the standard primary settling chamber depth of 15 feet. Greater inlet heights would be required with increased system demands as noted in Primary Settling Chamber Depth. Freeboard Depth Varies with inlet pipe elevation. Increase primary/secondary settling chamber depths as needed to maintain all inlet pipe elevations above connector pipe overflow.

**CHAMBER SEPARATION**

The standard separation between chambers is **10 feet** from center to center.
Soil conditions and deeper inverts may dictate required variations in chamber separation.

## The MaxWell® Plus Drainage System Detail And Specifications




*The referenced drawing and specifications are available on CAD either through our office or web site. This detail is copyrighted (2004) but may be used as is in construction plans without further release. For information on product application, individual project specifications or site evaluation, contact our Design Staff for no-charge assistance in any phase of your planning.*

### ITEM NUMBERS

1. **Manhole Cone** – Modified flat bottom.
2. **Stabilized Backfill** – 1-Sack Slurry.
3. **Bolted Ring & Grate/Cover** - Diameter as shown. Clean cast iron with wording "Storm Water Only" in raised letters. Bolted in 2 locations and secured to cone with mortar. Rim elevation ±0.02' of plans.
4. **Graded Basin or Paving** (by Others).
5. **Compacted Base Material** (by Others).
6. **PureFlo® Debris Shield** - Rolled 16 Ga. steel X 24" length with vented anti-siphon and internal .265" Max. SWO flattened expanded steel screen X 12" length. **Fusion bonded epoxy coated.**
7. **Pre-cast Liner** - 4000 PSI concrete 48" ID. X 54" OD. **Center in hole** and align sections to **maximize bearing surface.**
8. **Min. 6' Ø Drilled Shaft.**
9. **Support Bracket** - Formed 12 Ga. steel. **Fusion bonded epoxy coated.**
10. **Overflow Pipe** – Sch. 40 PVC mated to drainage pipe at base seal.
11. **Drainage Pipe** – ADS highway grade with TRI-A coupler. **Suspend pipe** during backfill operations to prevent buckling or breakage. Diameter as noted.
12. **Base Seal** – Geotextile or concrete slurry.
13. **Rock** – Washed, sized between 3/8" and 1-1/2" to **best complement soil conditions.**
14. **FloFast® Drainage Screen** – Sch. 40 PVC 0.120" slotted well screen with 32 slots per row/ft. Diameter varies 120" overall length with TRI-B coupler.
15. **Min. 4' Ø Shaft** – Drilled to **maintain permeability** of drainage soils.
16. **Fabric Seal** – U.V. Resistant Geotextile – **To be removed by customer** at project completion.
17. **Absorbent** – Hydrophobic Petrochemical Sponge. Min 128 oz. capacity.
18. **Connector Pipe** – 4" Ø Sch. 40 PVC.
19. **Anti-Siphon Vent** with flow regulator.
20. **Intake Screen** – Sch. 40 PVC 0.120" modified slotted well screen with 32 slots per row/ft. 48" overall length with TRI-C end cap.
21. **Freeboard Depth Varies** with inlet pipe elevation. Increase primary/secondary settling chamber depths as needed to maintain all inlet pipe elevations above connector pipe overflow.
22. **Optional Inlet Pipe** (by Others).
23. **Moisture Membrane** – 6 mil. Plastic. Place securely against eccentric cone and hole sidewall. Used in lieu of slurry in landscaped areas.
24. **Eight – (8) perforations per foot**, 2 row minimum.

# NOT THE NEW WATER FEATURE YOU HAD IN MIND FOR YOUR PROPERTY?

TORRENT RESOURCES



Drywells • Storm Drains • Catch Basins • Culverts • Headwalls • Underground Storage Tanks • Jet-Rod

SERVICE + MAINTENANCE

## TORRENT RESOURCES STORMWATER SOLUTIONS

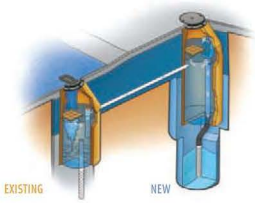
### The Need for Maintenance

Like any other part of your infrastructure, drywells and other storm drain components need periodic maintenance to function at optimum levels. Over time, silt, sediment and debris build up in the system and reduce the drainage capability. This leads to water standing for periods of time longer than the state requirement. It also inconveniences customers at retail locations and residential areas. With Arizona leading the nation in cases of West Nile Virus and other diseases carried by mosquitoes, standing water is a particular concern. A lack of maintenance can eventually lead to costly repair to the system as well as the basins and parking lots in which they inhabit.

### The Cleaning Process

The process starts with a thorough inspection of the drywells and other storm drain components. If the systems need to be serviced, it is imperative they are cleaned by someone familiar with the interworking of a drywell and compliant with the strict regulations of the ADEQ. The highly qualified Torrent Resources team offers:

• Certified Confined Space Entry • Disposal at an Approved Facility • Top of Line Equipment • Licensed, Bonded and Insured




### Drywell Restoration

If your property has a non-functioning drywell, Torrent Resources has a solution. By adding a new drywell to your existing system, we effectively convert the single chamber drywell into a new state-of-the-art MaxWell® Plus system (shown in the illustration to the left).

The existing structure remains to receive water and trap additional debris while directing the treated flow to the new drywell. This retrofit makes the entire system far superior to the original design.

### Industry Leader

As the Valley's #1 drywell contractor with over 65,000 systems installed, Torrent Resources has defined drywell design, installation, service and maintenance. Our drainage systems are specified by most Civil Engineers and Municipalities in the Southwest. With the largest, state-of-the-art equipment in the market, experienced construction crews and professional field supervisors, we are your experts when it comes to drainage solutions.

## SERVICE AND MAINTENANCE IS ONE EASY CALL OR CLICK AWAY

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Torrent Resources Incorporated
1509 E. Elwood Street Phoenix, Arizona 85040
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www.cleanmydrywell.com

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# Retention/Irrigation TC-12

## Description

Retention/irrigation refers to the capture of stormwater runoff in a holding pond and subsequent use of the captured volume for irrigation of landscape of natural pervious areas. This technology is very effective as a stormwater quality practice in that, for the captured water quality volume, it provides virtually no discharge to receiving waters and high stormwater constituent removal efficiencies. This technology mimics natural undeveloped watershed conditions wherein the vast majority of the rainfall volume during smaller rainfall events is infiltrated through the soil profile. Their main advantage over other infiltration technologies is the use of an irrigation system to spread the runoff over a larger area for infiltration. This allows them to be used in areas with low permeability soils.

Capture of stormwater can be accomplished in almost any kind of runoff storage facility, ranging from dry, concrete-lined ponds to those with vegetated basins and permanent pools. The pump and wet well should be automated with a rainfall sensor to provide irrigation only during periods when required infiltration rates can be realized. Generally, a spray irrigation system is required to provide an adequate flow rate for distributing the water quality volume (LCRA, 1998). Collection of roof runoff for subsequent use (rainwater harvesting) also qualifies as a retention/irrigation practice.

This technology is still in its infancy and there are no published reports on its effectiveness, cost, or operational requirements. The guidelines presented below should be considered tentative until additional data are available.

## California Experience

This BMP has never been implemented in California, only in the Austin, Texas area. The use there is limited to watersheds where no increase in pollutant load is allowed because of the sensitive nature of the watersheds.

## Advantages

- Pollutant removal effectiveness is high, accomplished primarily by: (1) sedimentation in the primary storage facility; (2) physical filtration of particulates through the soil profile; (3) dissolved constituents uptake in the vegetative root zone by the soil-resident microbial community.

### Design Considerations

- Soil for Infiltration
- Area Required
- Slope
- Environmental Side-effects

### Targeted Constituents

| | | |
|---|---|---|
| ☑ | Sediment | ■ |
| ☑ | Nutrients | ■ |
| ☑ | Trash | ■ |
| ☑ | Metals | ■ |
| ☑ | Bacteria | ■ |
| ☑ | Oil and Grease | ■ |
| ☑ | Organics | ■ |

**Legend** ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

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# Retention/Irrigation TC-12

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### Design Considerations

- Soil for Infiltration
- Area Required
- Slope
- Environmental Side-effects

### Targeted Constituents

| | | |
|---|---|---|
| ☑ | Sediment | ■ |
| ☑ | Nutrients | ■ |
| ☑ | Trash | ■ |
| ☑ | Metals | ■ |
| ☑ | Bacteria | ■ |
| ☑ | Oil and Grease | ■ |
| ☑ | Organics | ■ |

**Legend** ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

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# Site Design & Landscape Planning SD-10



**Design Objectives**

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

## Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

## Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

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### *Designing New Installations*

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

*Conserve Natural Areas during Landscape Planning*

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

*Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit*

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

*Protection of Slopes and Channels during Landscape Design*

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

### *Redeveloping Existing Installations*

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

### Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

# Roof Runoff Controls SD-11



Rain Garden

**Design Objectives**

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

## Description

Various roof runoff controls are available to address stormwater that drains off rooftops. The objective is to reduce the total volume and rate of runoff from individual lots, and retain the pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls consist of directing the roof runoff away from paved areas and mitigating flow to the storm drain system through one of several general approaches: cisterns or rain barrels; dry wells or infiltration trenches; pop-up emitters, and foundation planting. The first three approaches require the roof runoff to be contained in a gutter and downspout system. Foundation planting provides a vegetated strip under the drip line of the roof.

## Approach

Design of individual lots for single-family homes as well as lots for higher density residential and commercial structures should consider site design provisions for containing and infiltrating roof runoff or directing roof runoff to vegetative swales or buffer areas. Retained water can be reused for watering gardens, lawns, and trees. Benefits to the environment include reduced demand for potable water used for irrigation, improved stormwater quality, increased groundwater recharge, decreased runoff volume and peak flows, and decreased flooding potential.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

## Design Considerations

### *Designing New Installations*

*Cisterns or Rain Barrels*

One method of addressing roof runoff is to direct roof downspouts to cisterns or rain barrels. A cistern is an above ground storage vessel with either a manually operated valve or a permanently open outlet. Roof runoff is temporarily stored and then released for irrigation or infiltration between storms. The number of rain

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barrels needed is a function of the rooftop area. Some low impact developers recommend that every house have at least 2 rain barrels, with a minimum storage capacity of 1000 liters. Roof barrels serve several purposes including mitigating the first flush from the roof which has a high volume, amount of contaminants, and thermal load. Several types of rain barrels are commercially available. Consideration must be given to selecting rain barrels that are vector proof and childproof. In addition, some barrels are designed with a bypass valve that filters out grit and other contaminants and routes overflow to a soak-away pit or rain garden.

If the cistern has an operable valve, the valve can be closed to store stormwater for irrigation or infiltration between storms. This system requires continual monitoring by the resident or grounds crews, but provides greater flexibility in water storage and metering. If a cistern is provided with an operable valve and water is stored inside for long periods, the cistern must be covered to prevent mosquitoes from breeding.

A cistern system with a permanently open outlet can also provide for metering stormwater runoff. If the cistern outlet is significantly smaller than the size of the downspout inlet (say ¼ to ½ inch diameter), runoff will build up inside the cistern during storms, and will empty out slowly after peak intensities subside. This is a feasible way to mitigate the peak flow increases caused by rooftop impervious land coverage, especially for the frequent, small storms.

*Dry wells and Infiltration Trenches*

Roof downspouts can be directed to dry wells or infiltration trenches. A dry well is constructed by excavating a hole in the ground and filling it with an open graded aggregate, and allowing the water to fill the dry well and infiltrate after the storm event. An underground connection from the downspout conveys water into the dry well, allowing it to be stored in the voids. To minimize sedimentation from lateral soil movement, the sides and top of the stone storage matrix can be wrapped in a permeable filter fabric, though the bottom may remain open. A perforated observation pipe can be inserted vertically into the dry well to allow for inspection and maintenance.

In practice, dry wells receiving runoff from single roof downspouts have been successful over long periods because they contain very little sediment. They must be sized according to the amount of rooftop runoff received, but are typically 4 to 5 feet square, and 2 to 3 feet deep, with a minimum of 1-foot soil cover over the top (maximum depth of 10 feet).

To protect the foundation, dry wells must be set away from the building at least 10 feet. They must be installed in solids that accommodate infiltration. In poorly drained soils, dry wells have very limited feasibility.

Infiltration trenches function in a similar manner and would be particularly effective for larger roof areas. An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. These are described under Treatment Controls.

*Pop-up Drainage Emitter*

Roof downspouts can be directed to an underground pipe that daylights some distance from the building foundation, releasing the roof runoff through a pop-up emitter. Similar to a pop-up irrigation head, the emitter only opens when there is flow from the roof. The emitter remains flush to the ground during dry periods, for ease of lawn or landscape maintenance.

*Foundation Planting*

Landscape planting can be provided around the base to allow increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated sheet flow coming off the roof. Foundation plantings can reduce the physical impact of water on the soil and provide a subsurface matrix of roots that encourage infiltration. These plantings must be sturdy enough to tolerate the heavy runoff sheet flows, and periodic soil saturation.

### *Redeveloping Existing Installations*

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

## Supplemental Information

### *Examples*

- City of Ottawa's Water Links Surface –Water Quality Protection Program
- City of Toronto Downspout Disconnection Program
- City of Boston, MA, Rain Barrel Demonstration Program

## Other Resources

Hager, Marty Catherine, Stormwater, "Low-Impact Development", January/February 2003. www.stormh2o.com

Low Impact Urban Design Tools, Low Impact Development Design Center, Beltsville, MD. www.lid-stormwater.net

Start at the Source, Bay Area Stormwater Management Agencies Association, 1999 Edition

# Efficient Irrigation SD-12



**Design Objectives**

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

## Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

## Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

## Design Considerations

### *Designing New Installations*

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

### *Redeveloping Existing Installations*

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

## Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

# Storm Drain Signage SD-13




**Design Objectives**

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

## Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

## Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

## Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

## Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

### *Designing New Installations*

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

### *Redeveloping Existing Installations*

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

## Additional Information

### *Maintenance Considerations*

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

### *Placement*

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

## Supplemental Information

### *Examples*

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

## Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

# APPENDIX H

# AMBIENT NOISE MEASUREMENT DATA

UltraSystems
environmental | management | planning

16431 Scientific Way
Irvine, CA 92618
949.788.4900

# Noise Measurement Report Form – Part A

Date: 08/25/2022 Day of Week: Thursday Time: 11:58 AM Project Number: 7187

Monitoring Segment / Area: 1 Monitoring Site Address: 12623 Mustard St

Measurement Taken By: Erik Michael of UltraSystems Environmental

Average Wind Speed: 3.8 mph [km/hr] Compass Heading (meter ⊥ to source) 292° W

Temp: 90.1 °F Relative Humidity: 31.2 % Compass Heading (into wind) 250° W

Cloud Cover Class (1 = heavy overcast, 2 = lightly overcast, 3 = sunny) 3

Approximate distance of sound level meter from receptor location: 8 ft

Approximate distance of sound level meter from construction site: _____
(Leave Blank for Baseline Ambient)

Receptor Land Use (Check One): ☑ Residential ☐ Institutional ☐ Comm./Ind. ☐ Recreational

Sound Level Meter: Make and Model: Quest SoundPro DL-1-1/3 Serial Number: BEN03007

Meter Setting: ☑ A-Weighted Sound Level (SLOW) ☐ A-Weighted Sound Level (FAST)

Measurement Start Time: 11:58 AM Measurement End Time: 12:13 PM

Total Measurement Time: 15 min Session File Name (e.g., S012): S272

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Caltrans ☐ Complaint response

## Measurement Results

| Measurement Type | Measured Levels (dB) |
|---|---|
| Calibration | Pre: 114.0 Post: 113.9 |
| $L_{eq\ (h)}$ | Slow: 53.1 Fast: |
| $L_{max}$ | Slow: 61.1 Fast: |
| $L_{90}$ | Slow: 49.8 Fast: |

**Field Notes:**

1. Traffic noise from 15 freeway
2. Police Sirens ~ 45 sec interval
3. _____

Noise Monitor's Signature: _____ Date: 08/25/2022

UltraSystems
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16431 Scientific Way
Irvine, CA 92618
949.788.4900

# Noise Measurement Report Form – Part B

Date: 08/25/2022 Day of Week: Thursday Time: 11:58 AM Project Number: 7187

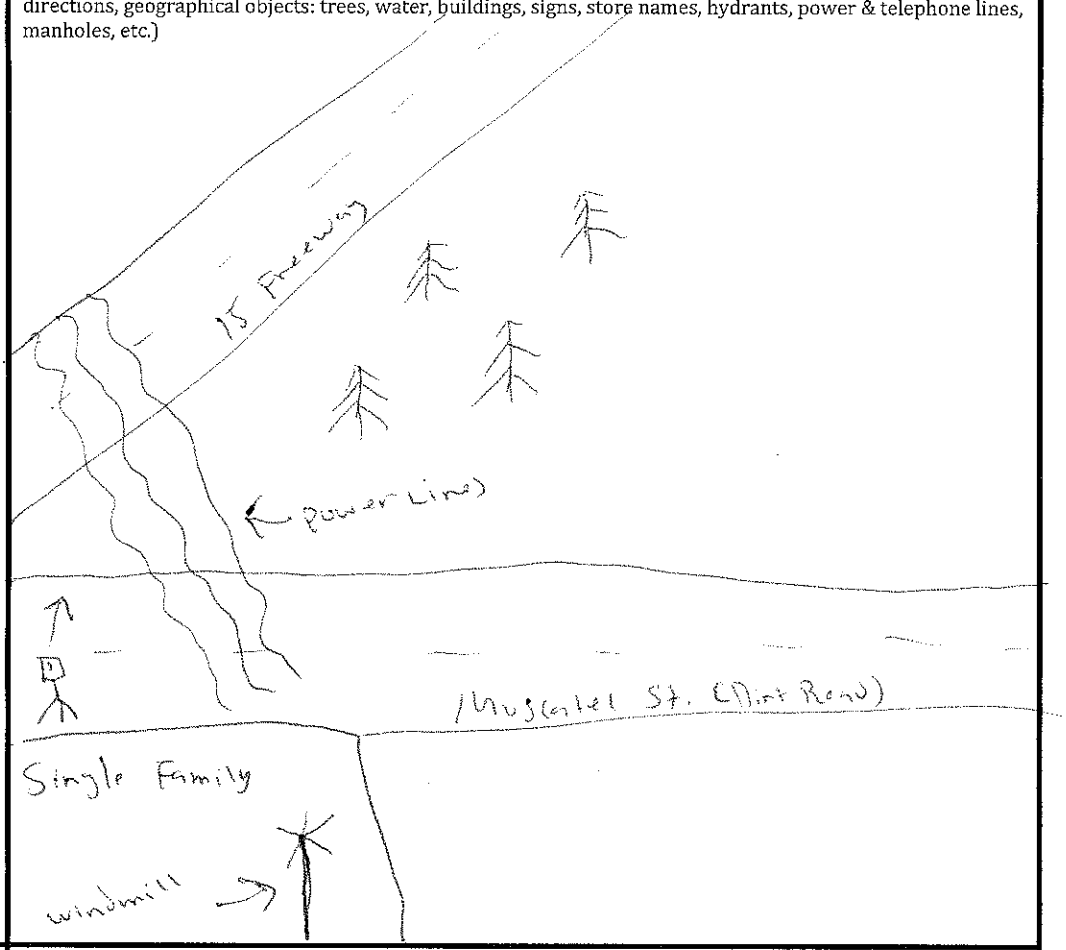
Monitoring Segment / Area: 1 Monitoring Site Address: 12623 Muscatel St.

## Site Map

**Plan View**

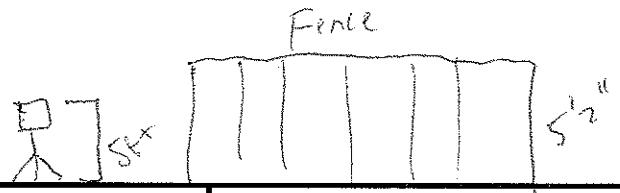
North Arrow (fill-in)

(Indicate site location, receptor location, meter location, distance in feet to landmarks, roadways, travel lane directions, geographical objects: trees, water, buildings, signs, store names, hydrants, power & telephone lines, manholes, etc.)




**Elevation View**

(Indicate terrain, roadway, height and location of receptor, meter, walls, barriers, buildings, etc.)




| Latitude: 34.412080° | Longitude: −117.387977° | Elevation: 3630ft |
|---|---|---|

Noise Monitor's Signature: _____ Date: 08/25/2022

# Session Report

**8/25/2022**

## Information Panel

| | |
|---|---|
| Name | S272_BIN030017_25082022_154820 |
| Start Time | 8/25/2022 11:57:51 AM |
| Stop Time | 8/25/2022 12:12:51 PM |
| Device Name | BIN030017 |
| Model Type | SoundPro DL |
| Device Firmware Rev | R.13F |
| Comments | |

## Summary Data Panel

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 53.1 dB | L90 | 1 | 49.8 dB |
| Lmax | 1 | 61.1 dB | | | |
| Exchange Rate | 1 | 3 dB | Weighting | 1 | A |
| Response | 1 | SLOW | Bandwidth | 1 | OFF |
| Exchange Rate | 2 | 5 dB | Weighting | 2 | C |
| Response | 2 | FAST | | | |

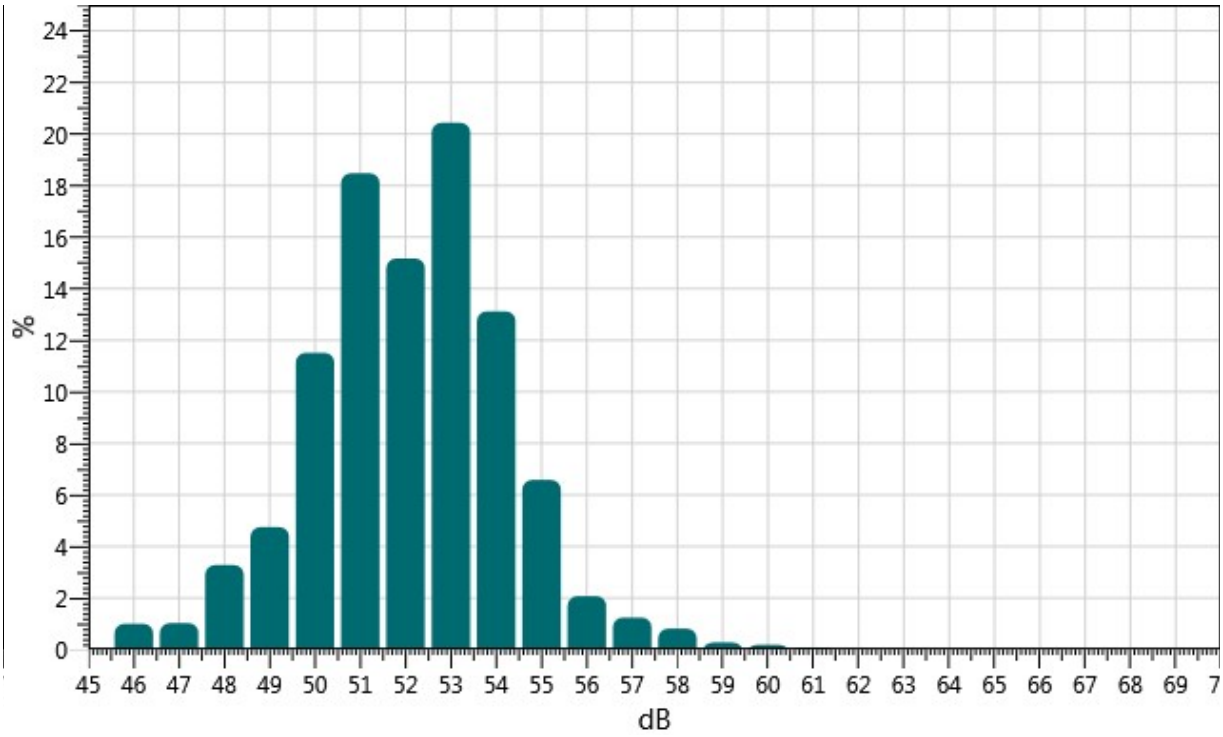
## Statistics Table

| dB: | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| 46: | 0.10 | 0.11 | 0.14 | 0.16 | 0.09 | 0.05 | 0.04 | 0.08 | 0.06 | 0.15 | 1.00 |
| 47: | 0.18 | 0.11 | 0.06 | 0.04 | 0.04 | 0.04 | 0.11 | 0.19 | 0.15 | 0.10 | 1.02 |
| 48: | 0.06 | 0.14 | 0.20 | 0.17 | 0.33 | 0.33 | 0.38 | 0.59 | 0.57 | 0.50 | 3.28 |
| 49: | 0.50 | 0.32 | 0.41 | 0.40 | 0.30 | 0.43 | 0.52 | 0.56 | 0.71 | 0.61 | 4.75 |
| 50: | 0.55 | 0.91 | 1.27 | 1.10 | 1.21 | 1.31 | 1.20 | 1.43 | 1.31 | 1.22 | 11.51 |
| 51: | 1.62 | 1.86 | 1.86 | 1.99 | 1.50 | 1.77 | 1.97 | 1.99 | 2.01 | 1.89 | 18.47 |
| 52: | 1.69 | 1.30 | 1.23 | 1.24 | 1.49 | 1.44 | 1.66 | 1.45 | 1.67 | 1.99 | 15.17 |
| 53: | 1.90 | 2.01 | 2.25 | 2.14 | 2.28 | 1.92 | 1.59 | 2.16 | 2.24 | 1.95 | 20.43 |
| 54: | 1.39 | 1.24 | 1.27 | 1.51 | 1.52 | 1.60 | 1.40 | 1.20 | 1.02 | 0.97 | 13.12 |
| 55: | 0.90 | 0.67 | 0.56 | 0.69 | 0.90 | 0.74 | 0.64 | 0.59 | 0.52 | 0.37 | 6.58 |
| 56: | 0.23 | 0.16 | 0.23 | 0.30 | 0.21 | 0.21 | 0.16 | 0.17 | 0.18 | 0.22 | 2.07 |
| 57: | 0.14 | 0.10 | 0.11 | 0.12 | 0.13 | 0.15 | 0.15 | 0.13 | 0.13 | 0.10 | 1.24 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 58: | 0.10 | 0.12 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.13 | 0.05 | 0.03 | 0.81 |
| 59: | 0.02 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.05 | 0.02 | 0.27 |
| 60: | 0.02 | 0.02 | 0.05 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.19 |
| 61: | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 |

## Statistics Chart

S272_BIN030017_25082022_154820: Statistics Chart

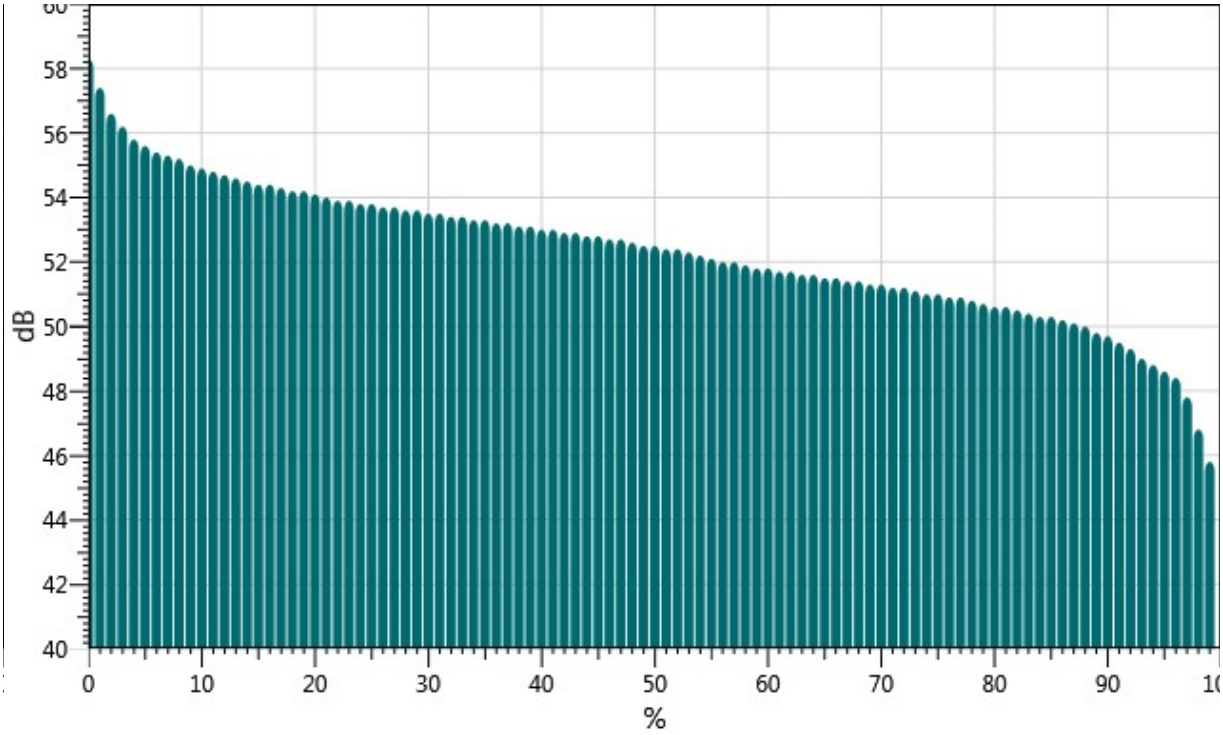



## Exceedance Table

| . | 0% | 1% | 2% | 3% | 4% | 5% | 6% | %7 | %8 | %9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0%: | | 58.3 | 57.4 | 56.6 | 56.2 | 55.8 | 55.6 | 55.4 | 55.3 | 55.2 |
| 10%: | 55.0 | 54.9 | 54.8 | 54.7 | 54.6 | 54.5 | 54.4 | 54.4 | 54.3 | 54.2 |
| 20%: | 54.2 | 54.1 | 54.0 | 53.9 | 53.9 | 53.8 | 53.8 | 53.7 | 53.7 | 53.6 |
| 30%: | 53.6 | 53.5 | 53.5 | 53.4 | 53.4 | 53.3 | 53.3 | 53.2 | 53.2 | 53.1 |
| 40%: | 53.1 | 53.0 | 53.0 | 52.9 | 52.9 | 52.8 | 52.8 | 52.7 | 52.7 | 52.6 |
| 50%: | 52.5 | 52.5 | 52.4 | 52.4 | 52.3 | 52.2 | 52.1 | 52.0 | 52.0 | 51.9 |
| 60%: | 51.8 | 51.8 | 51.7 | 51.7 | 51.6 | 51.6 | 51.5 | 51.5 | 51.4 | 51.4 |
| 70%: | 51.3 | 51.3 | 51.2 | 51.2 | 51.1 | 51.0 | 51.0 | 50.9 | 50.9 | 50.8 |
| 80%: | 50.7 | 50.6 | 50.6 | 50.5 | 50.4 | 50.3 | 50.3 | 50.2 | 50.1 | 50.0 |
| 90%: | 49.8 | 49.7 | 49.5 | 49.3 | 49.0 | 48.8 | 48.6 | 48.4 | 47.8 | 46.8 |
| 100%: | 45.8 | | | | | | | | | |

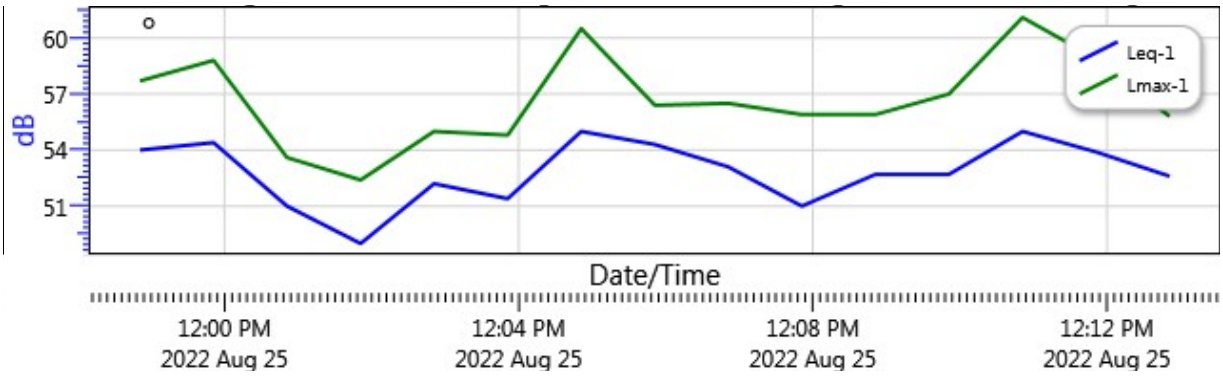
## Exceedance Chart

S272_BIN030017_25082022_154820: Exceedance Chart




## Logged Data Chart

S272_BIN030017_25082022_154820: Logged Data Chart



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# Noise Measurement Report Form – Part A

Date: 08/25/2022 Day of Week: Thursday Time: 10:52AM Project Number: 7187

Monitoring Segment / Area: 2 Monitoring Site Address: 12850 Muscatel St

Measurement Taken By: Erik / Michael of UltraSystems Environmental

Average Wind Speed: 5.2 mph [km/hr] Compass Heading (meter ⊥ to source) 275° W

Temp: 88.3 °F Relative Humidity: 31.8 % Compass Heading (into wind) 236° SW

Cloud Cover Class (1 = heavy overcast, 2 = lightly overcast, 3 = sunny) 3

Approximate distance of sound level meter from receptor location: ~150 ft

Approximate distance of sound level meter from construction site: _____
(Leave Blank for Baseline Ambient)

Receptor Land Use (Check One): ☐ Residential ☑ Institutional ☐ Comm./Ind. ☐ Recreational

Sound Level Meter: Make and Model: Quest SoundPro DL-1-1/3 Serial Number: BFN030017

Meter Setting: ☑ A-Weighted Sound Level (SLOW) ☐ A-Weighted Sound Level (FAST)

Measurement Start Time: 10:52AM Measurement End Time: 11:07AM

Total Measurement Time: 15 min Session File Name (e.g., S012): S270

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Caltrans ☐ Complaint response

## Measurement Results

| Measurement Type | Measured Levels (dB) |
|---|---|
| Calibration | Pre: 114.0 Post: 114.2 |
| $L_{eq\ (h)}$ | Slow: 49.8 Fast: |
| $L_{max}$ | Slow: 62.6 Fast: |
| $L_{90}$ | Slow: 45.7 Fast: |

**Field Notes:**

1. Traffic noise along Muscatel
2. _____
3. _____

Noise Monitor's Signature: _____ Date: 08/25/2022

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Irvine, CA 92618
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# Noise Measurement Report Form – Part B

Date: 08/25/2022 Day of Week: Thursday Time: 10:52 AM Project Number: 7187

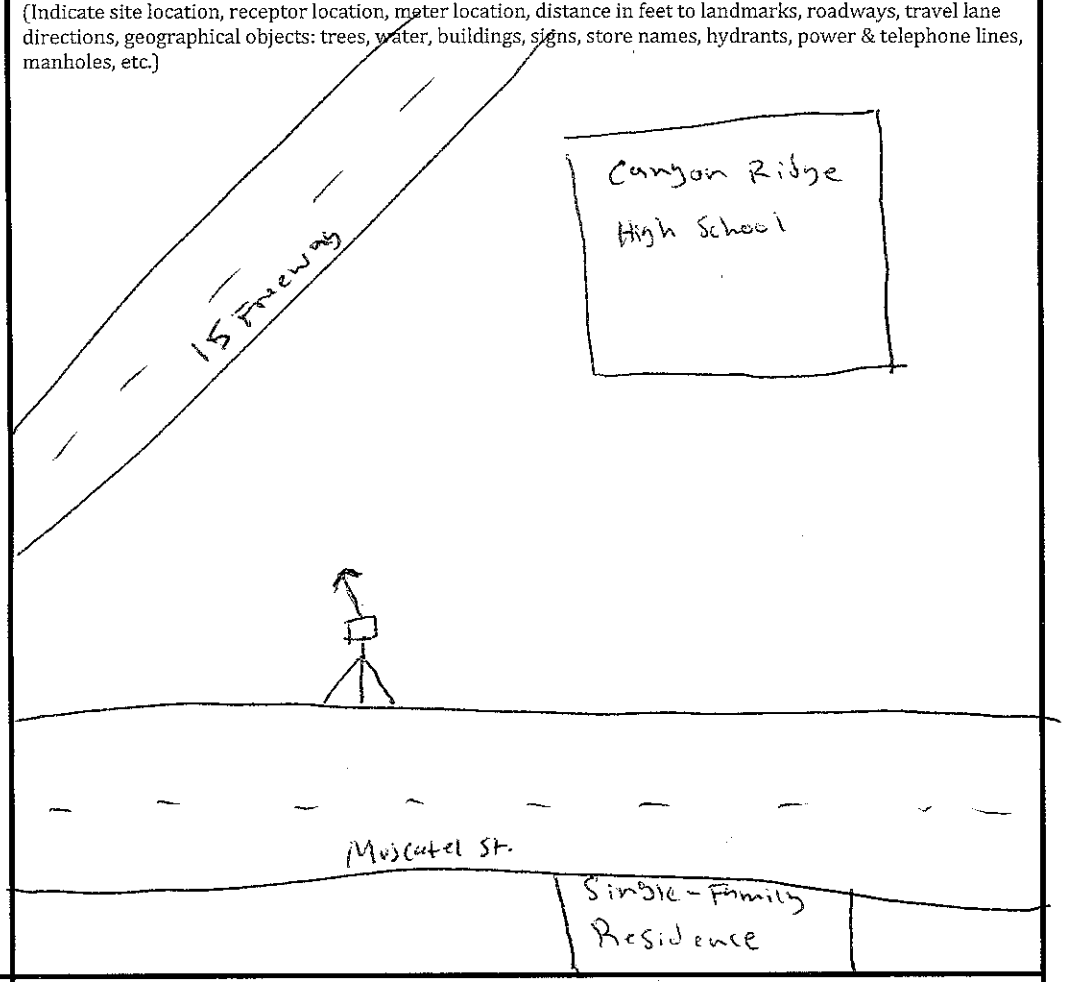
Monitoring Segment / Area: 2 Monitoring Site Address: 12850 Muscatel St.

## Site Map

**Plan View**

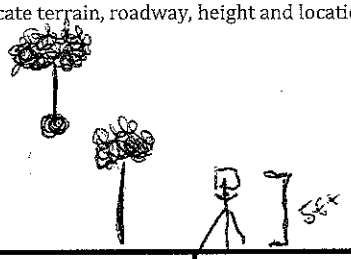
North Arrow (fill-in)

(Indicate site location, receptor location, meter location, distance in feet to landmarks, roadways, travel lane directions, geographical objects: trees, water, buildings, signs, store names, hydrants, power & telephone lines, manholes, etc.)




**Elevation View**

(Indicate terrain, roadway, height and location of receptor, meter, walls, barriers, buildings, etc.)




| Latitude: 34.412319 | Longitude: -117.383736 | Elevation: 3610 ft |
|---|---|---|

Noise Monitor's Signature: [signature] Date: 08/25/2022

# Session Report

**8/25/2022**

## Information Panel

| | |
|---|---|
| Name | S270_BIN030017_25082022_154806 |
| Start Time | 8/25/2022 10:51:57 AM |
| Stop Time | 8/25/2022 11:06:57 AM |
| Device Name | BIN030017 |
| Model Type | SoundPro DL |
| Device Firmware Rev | R.13F |
| Comments | |

## Summary Data Panel

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 49.8 dB | L90 | 1 | 45.7 dB |
| Lmax | 1 | 62.6 dB | | | |
| Exchange Rate | 1 | 3 dB | Weighting | 1 | A |
| Response | 1 | SLOW | Bandwidth | 1 | OFF |
| Exchange Rate | 2 | 5 dB | Weighting | 2 | C |
| Response | 2 | FAST | | | |

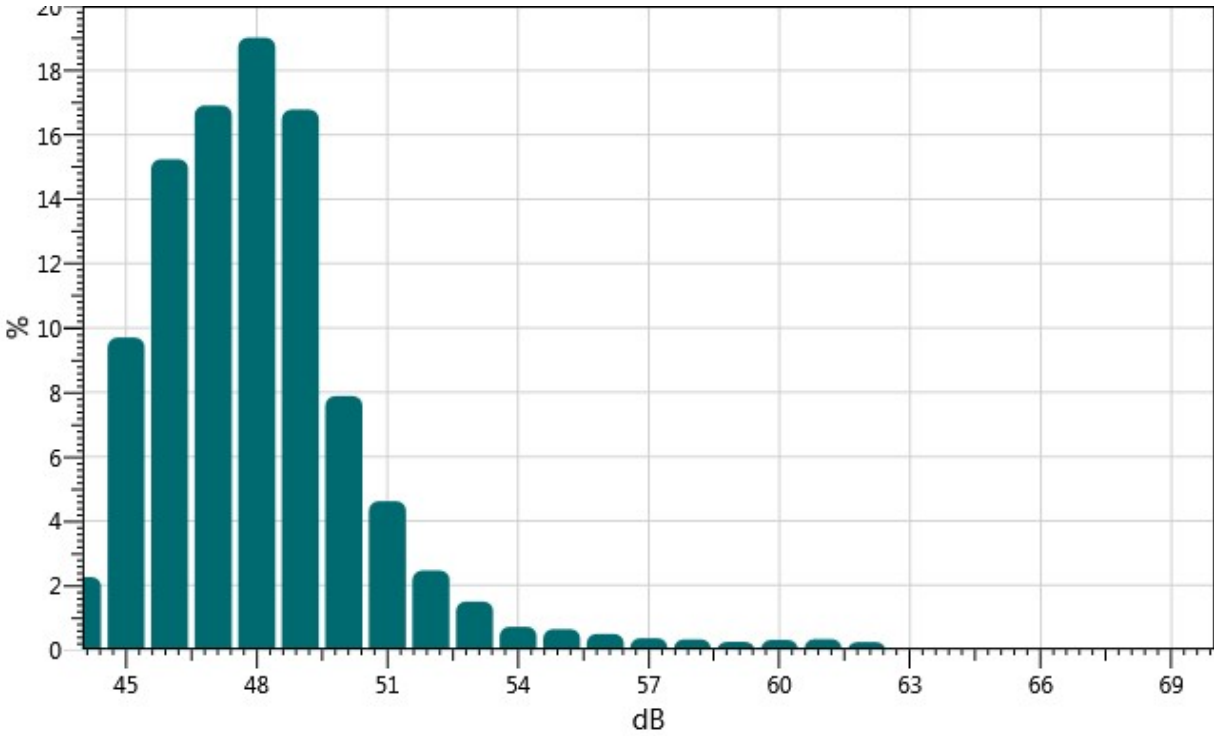
## Statistics Table

| dB: | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 44: | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.07 | 0.15 | 0.66 | 0.68 | 0.63 | 2.26 |
| 45: | 0.79 | 0.65 | 0.54 | 0.64 | 0.41 | 0.93 | 1.32 | 1.42 | 1.45 | 1.55 | 9.70 |
| 46: | 1.85 | 1.32 | 1.90 | 1.64 | 1.35 | 1.53 | 1.50 | 1.32 | 1.43 | 1.40 | 15.24 |
| 47: | 1.79 | 1.52 | 1.57 | 1.53 | 1.66 | 1.36 | 1.61 | 2.02 | 1.86 | 1.99 | 16.91 |
| 48: | 2.24 | 2.05 | 1.59 | 1.63 | 1.30 | 1.69 | 1.92 | 1.89 | 2.24 | 2.48 | 19.02 |
| 49: | 2.58 | 1.59 | 1.84 | 1.65 | 1.73 | 1.73 | 1.61 | 1.81 | 1.38 | 0.86 | 16.78 |
| 50: | 1.07 | 1.01 | 0.97 | 0.60 | 0.83 | 1.11 | 0.85 | 0.51 | 0.51 | 0.41 | 7.88 |
| 51: | 0.39 | 0.43 | 0.56 | 0.65 | 0.46 | 0.49 | 0.53 | 0.51 | 0.34 | 0.26 | 4.61 |
| 52: | 0.40 | 0.24 | 0.27 | 0.23 | 0.25 | 0.23 | 0.26 | 0.25 | 0.18 | 0.14 | 2.46 |
| 53: | 0.13 | 0.13 | 0.23 | 0.20 | 0.10 | 0.10 | 0.13 | 0.16 | 0.15 | 0.16 | 1.50 |
| 54: | 0.07 | 0.06 | 0.07 | 0.06 | 0.04 | 0.06 | 0.13 | 0.07 | 0.08 | 0.07 | 0.71 |
| 55: | 0.09 | 0.07 | 0.05 | 0.06 | 0.08 | 0.09 | 0.07 | 0.03 | 0.03 | 0.07 | 0.64 |
| 56: | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.03 | 0.04 | 0.04 | 0.05 | 0.04 | 0.49 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 57: | 0.03 | 0.05 | 0.03 | 0.03 | 0.02 | 0.03 | 0.03 | 0.02 | 0.05 | 0.04 | 0.36 |
| 58: | 0.03 | 0.03 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.04 | 0.32 |
| 59: | 0.03 | 0.04 | 0.02 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.24 |
| 60: | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.04 | 0.30 |
| 61: | 0.04 | 0.05 | 0.08 | 0.03 | 0.02 | 0.01 | 0.02 | 0.02 | 0.03 | 0.02 | 0.33 |
| 62: | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.10 | 0.02 | 0.00 | 0.00 | 0.00 | 0.24 |

## Statistics Chart

S270_BIN030017_25082022_154806: Statistics Chart



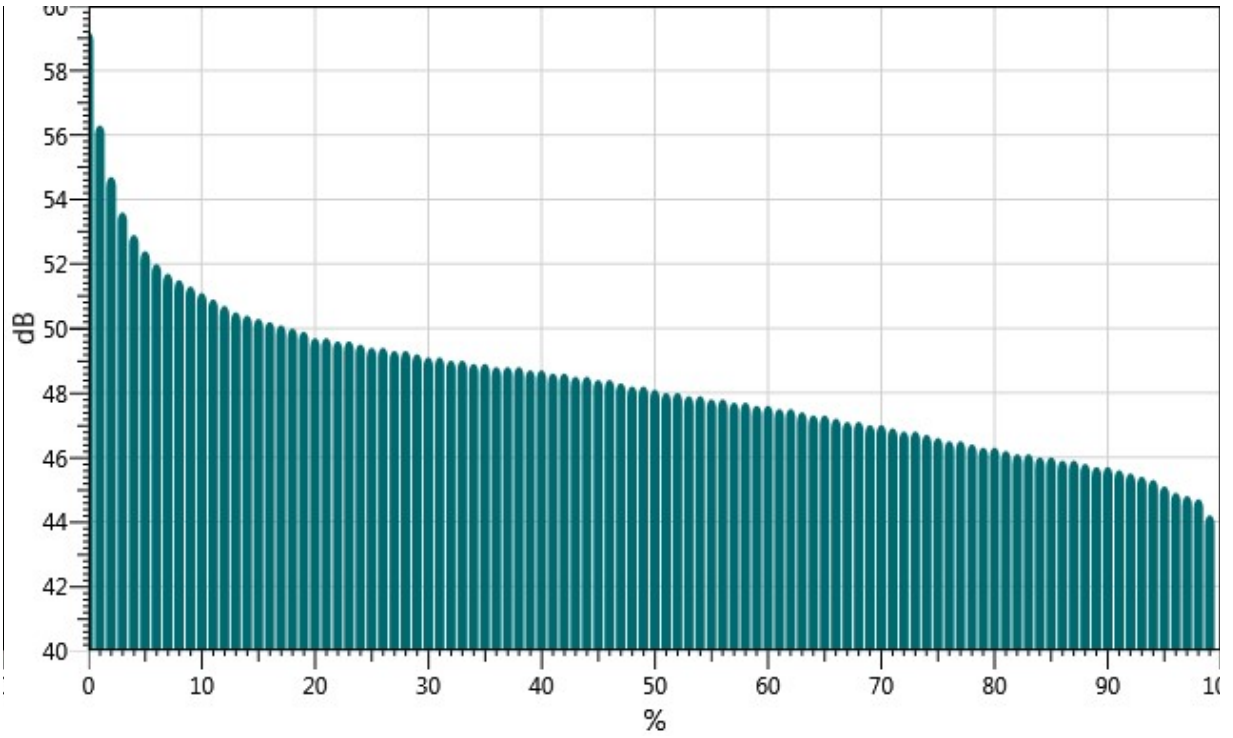

## Exceedance Table

| . | 0% | 1% | 2% | 3% | 4% | 5% | 6% | %7 | %8 | %9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0%: | | 59.2 | 56.3 | 54.7 | 53.6 | 52.9 | 52.4 | 52.0 | 51.7 | 51.5 |
| 10%: | 51.3 | 51.1 | 50.9 | 50.7 | 50.5 | 50.4 | 50.3 | 50.2 | 50.1 | 50.0 |
| 20%: | 49.9 | 49.7 | 49.7 | 49.6 | 49.6 | 49.5 | 49.4 | 49.4 | 49.3 | 49.3 |
| 30%: | 49.2 | 49.1 | 49.1 | 49.0 | 49.0 | 48.9 | 48.9 | 48.8 | 48.8 | 48.8 |
| 40%: | 48.7 | 48.7 | 48.6 | 48.6 | 48.5 | 48.5 | 48.4 | 48.4 | 48.3 | 48.2 |
| 50%: | 48.2 | 48.1 | 48.0 | 48.0 | 47.9 | 47.9 | 47.8 | 47.8 | 47.7 | 47.7 |
| 60%: | 47.6 | 47.6 | 47.5 | 47.5 | 47.4 | 47.3 | 47.3 | 47.2 | 47.1 | 47.1 |
| 70%: | 47.0 | 47.0 | 46.9 | 46.8 | 46.8 | 46.7 | 46.6 | 46.5 | 46.5 | 46.4 |
| 80%: | 46.3 | 46.3 | 46.2 | 46.1 | 46.1 | 46.0 | 46.0 | 45.9 | 45.9 | 45.8 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 90%: | 45.7 | 45.7 | 45.6 | 45.5 | 45.4 | 45.3 | 45.1 | 44.9 | 44.8 | 44.7 |
| 100%: | 44.2 | | | | | | | | | |

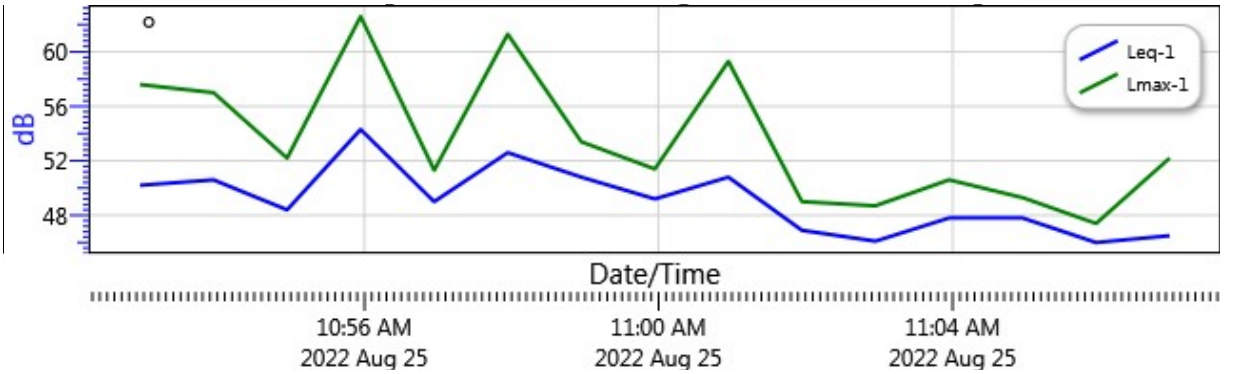
## Exceedance Chart

S270_BIN030017_25082022_154806: Exceedance Chart




## Logged Data Chart

S270_BIN030017_25082022_154806: Logged Data Chart



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# Noise Measurement Report Form – Part A

Date: 8/25/22 Day of Week: Thursday Time: 11:22am Project Number: 7187

Monitoring Segment / Area: 3 Monitoring Site Address: 12850 Muscatel St

Measurement Taken By: Michael / Erik of UltraSystems Environmental

Average Wind Speed: 4.8 mph [km/hr] Compass Heading (meter ⊥ to source) 282° W

Temp: 94.1 °F Relative Humidity: 31.7 % Compass Heading (into wind) 173° S

Cloud Cover Class (1 = heavy overcast, 2 = lightly overcast, 3 = sunny) 3

Approximate distance of sound level meter from receptor location: 7ft

Approximate distance of sound level meter from construction site: _____
(Leave Blank for Baseline Ambient)

Receptor Land Use (Check One): ☑ Residential ☐ Institutional ☐ Comm./Ind. ☐ Recreational

Sound Level Meter: Make and Model: Quest SoundPro DL-1-1/3 Serial Number: BTH030017

Meter Setting: ☑ A-Weighted Sound Level (SLOW) ☐ A-Weighted Sound Level (FAST)

Measurement Start Time: 11:22 am Measurement End Time: 11:37am

Total Measurement Time: 15 min Session File Name (e.g., S012): S271

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Caltrans ☐ Complaint response

## Measurement Results

| Measurement Type | Measured Levels (dB) |
|---|---|
| Calibration | Pre: 114.0 Post: 114.0 |
| $L_{eq\ (h)}$ | Slow: 56.6 Fast: |
| $L_{max}$ | Slow: 62.8 Fast: |
| $L_{90}$ | Slow: 47.5 Fast: |

**Field Notes:**

1. Noise from school in distance
2. Freeway noise from I-15
3. _____

Noise Monitor's Signature: _____ Date: 8/25/22

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16431 Scientific Way
Irvine, CA 92618
949.788.4900

# Noise Measurement Report Form – Part B

Date: 08/25/22 Day of Week: Thursday Time: 11:22am Project Number: 7187

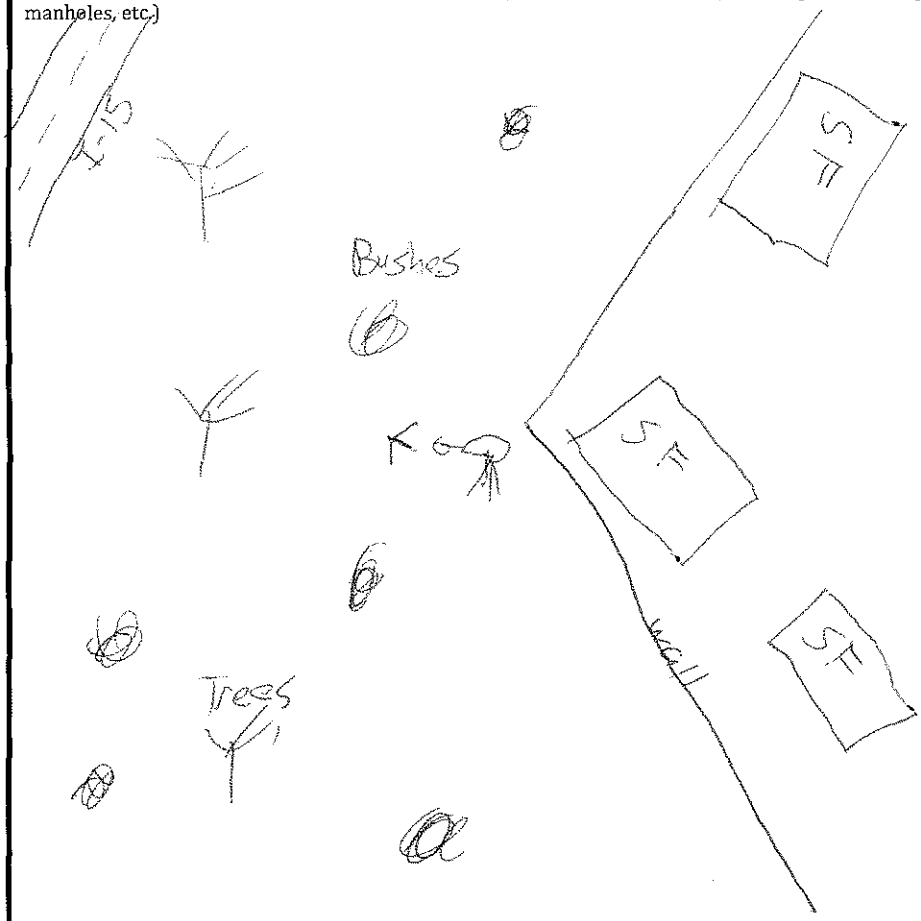
Monitoring Segment / Area: 3 Monitoring Site Address: 12850 Muscatel St

## Site Map

**Plan View**

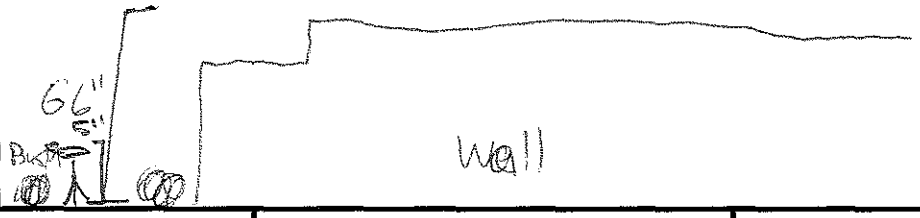
North Arrow (fill-in)

(Indicate site location, receptor location, meter location, distance in feet to landmarks, roadways, travel lane directions, geographical objects: trees, water, buildings, signs, store names, hydrants, power & telephone lines, manholes, etc.)




**Elevation View**

(Indicate terrain, roadway, height and location of receptor, meter, walls, barriers, buildings, etc.)




| Latitude: 34.414718° | Longitude: −117.38163° | Elevation: 3590ft |
|---|---|---|

Noise Monitor's Signature: [signature] Date: 08/25/22

# Session Report

**8/25/2022**

## Information Panel

| | |
|---|---|
| Name | S271_BIN030017_25082022_154815 |
| Start Time | 8/25/2022 11:22:28 AM |
| Stop Time | 8/25/2022 11:37:28 AM |
| Device Name | BIN030017 |
| Model Type | SoundPro DL |
| Device Firmware Rev | R.13F |
| Comments | |

## Summary Data Panel

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 50.6 dB | L90 | 1 | 47.5 dB |
| Lmax | 1 | 62.8 dB | | | |
| Exchange Rate | 1 | 3 dB | Weighting | 1 | A |
| Response | 1 | SLOW | Bandwidth | 1 | OFF |
| Exchange Rate | 2 | 5 dB | Weighting | 2 | C |
| Response | 2 | FAST | | | |

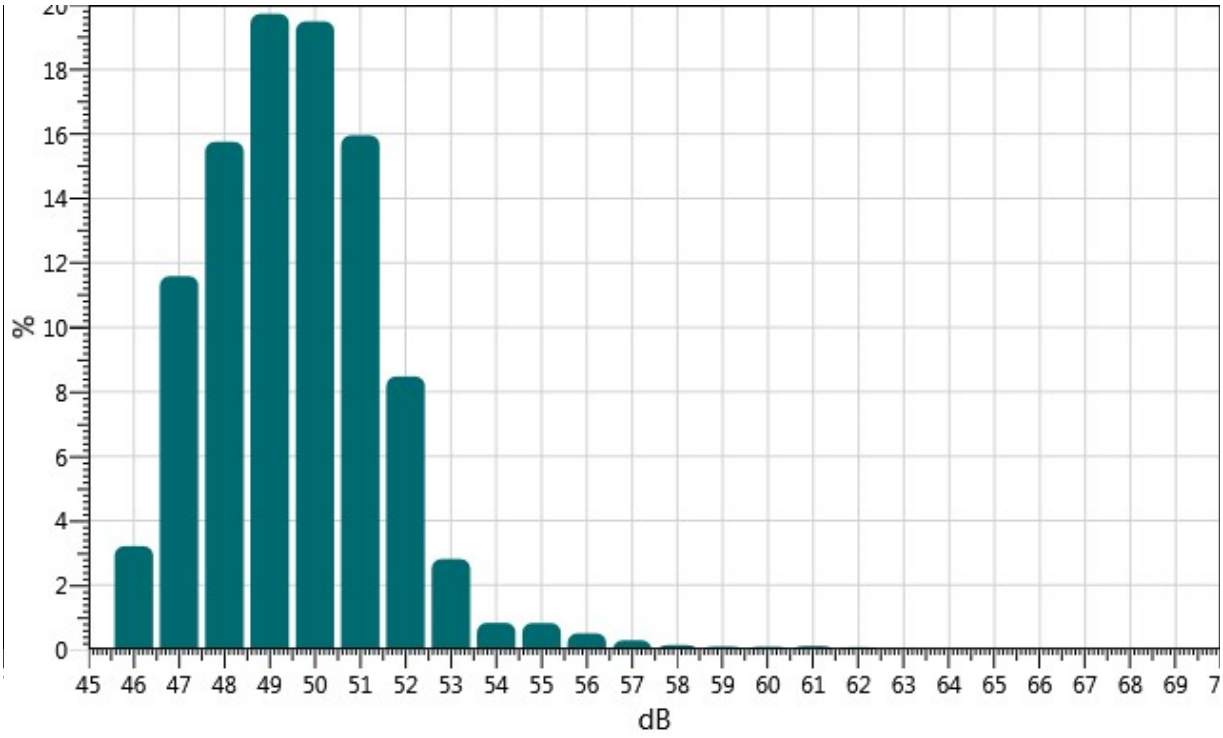
## Statistics Table

| dB: | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.04 |
| 46: | 0.14 | 0.30 | 0.44 | 0.59 | 0.26 | 0.24 | 0.34 | 0.23 | 0.28 | 0.39 | 3.21 |
| 47: | 0.50 | 0.79 | 0.84 | 1.05 | 1.38 | 1.34 | 1.39 | 1.38 | 1.40 | 1.53 | 11.59 |
| 48: | 1.65 | 1.31 | 1.79 | 1.88 | 1.87 | 1.65 | 1.54 | 1.41 | 1.22 | 1.44 | 15.76 |
| 49: | 2.51 | 1.90 | 2.16 | 1.73 | 1.91 | 1.91 | 1.83 | 1.84 | 1.74 | 2.19 | 19.73 |
| 50: | 2.06 | 2.02 | 1.97 | 1.47 | 1.66 | 2.34 | 2.08 | 1.75 | 1.96 | 2.20 | 19.49 |
| 51: | 2.00 | 2.03 | 1.56 | 1.51 | 1.68 | 1.90 | 1.69 | 1.23 | 1.16 | 1.18 | 15.95 |
| 52: | 1.65 | 1.05 | 0.90 | 0.85 | 0.78 | 0.93 | 0.75 | 0.64 | 0.40 | 0.52 | 8.47 |
| 53: | 0.57 | 0.47 | 0.36 | 0.34 | 0.28 | 0.20 | 0.18 | 0.14 | 0.17 | 0.11 | 2.81 |
| 54: | 0.08 | 0.08 | 0.09 | 0.08 | 0.07 | 0.08 | 0.08 | 0.11 | 0.09 | 0.08 | 0.83 |
| 55: | 0.08 | 0.07 | 0.05 | 0.07 | 0.09 | 0.11 | 0.09 | 0.08 | 0.11 | 0.07 | 0.82 |
| 56: | 0.06 | 0.05 | 0.05 | 0.04 | 0.05 | 0.05 | 0.05 | 0.10 | 0.03 | 0.03 | 0.51 |
| 57: | 0.04 | 0.03 | 0.07 | 0.02 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.02 | 0.29 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 58: | 0.02 | 0.02 | 0.01 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.14 |
| 59: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.09 |
| 60: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.09 |
| 61: | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.11 |
| 62: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.02 | 0.00 | 0.00 | 0.07 |

## Statistics Chart

S271_BIN030017_25082022_154815: Statistics Chart



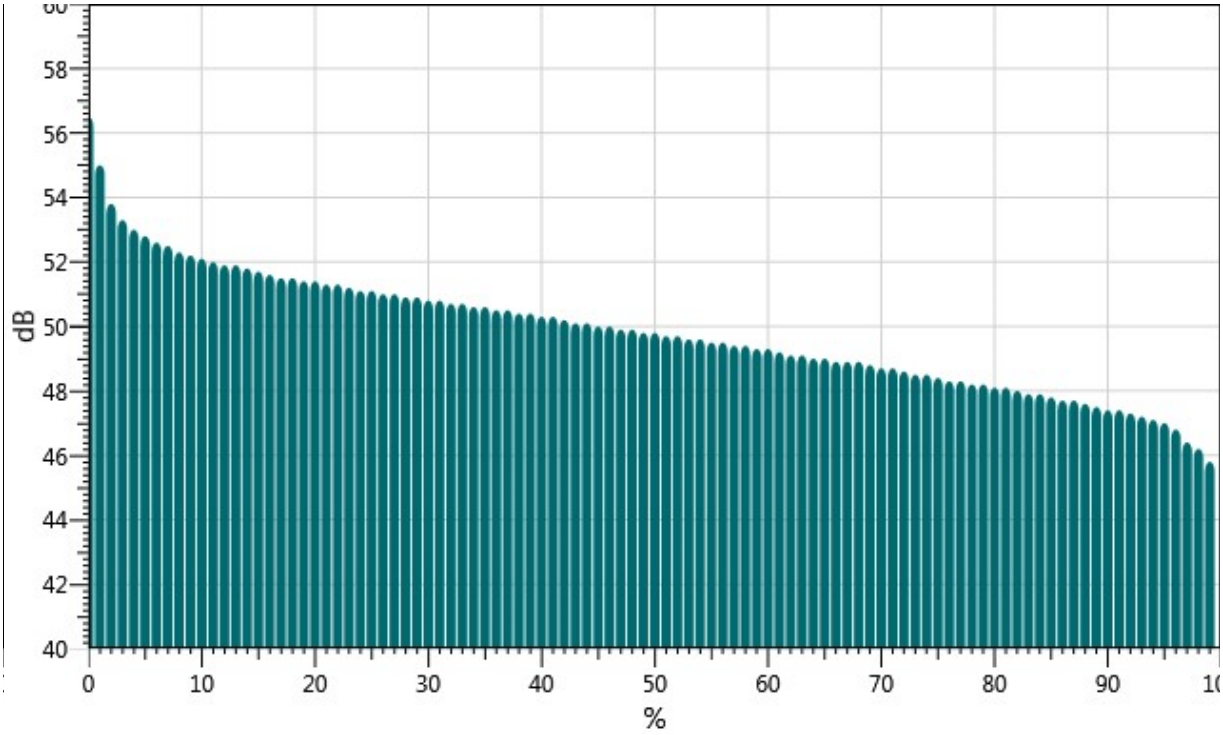

## Exceedance Table

| . | 0% | 1% | 2% | 3% | 4% | 5% | 6% | %7 | %8 | %9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0%: | | 56.5 | 55.0 | 53.8 | 53.3 | 53.0 | 52.8 | 52.6 | 52.5 | 52.3 |
| 10%: | 52.2 | 52.1 | 52.0 | 51.9 | 51.9 | 51.8 | 51.7 | 51.6 | 51.5 | 51.5 |
| 20%: | 51.4 | 51.4 | 51.3 | 51.3 | 51.2 | 51.1 | 51.1 | 51.0 | 51.0 | 50.9 |
| 30%: | 50.9 | 50.8 | 50.8 | 50.7 | 50.7 | 50.6 | 50.6 | 50.5 | 50.5 | 50.4 |
| 40%: | 50.4 | 50.3 | 50.3 | 50.2 | 50.1 | 50.1 | 50.0 | 50.0 | 49.9 | 49.9 |
| 50%: | 49.8 | 49.8 | 49.7 | 49.7 | 49.6 | 49.6 | 49.5 | 49.5 | 49.4 | 49.4 |
| 60%: | 49.3 | 49.3 | 49.2 | 49.1 | 49.1 | 49.0 | 49.0 | 48.9 | 48.9 | 48.9 |
| 70%: | 48.8 | 48.7 | 48.7 | 48.6 | 48.5 | 48.5 | 48.4 | 48.3 | 48.3 | 48.2 |
| 80%: | 48.2 | 48.1 | 48.1 | 48.0 | 47.9 | 47.9 | 47.8 | 47.7 | 47.7 | 47.6 |
| 90%: | 47.5 | 47.4 | 47.4 | 47.3 | 47.2 | 47.1 | 47.0 | 46.8 | 46.4 | 46.2 |

100%: 45.8

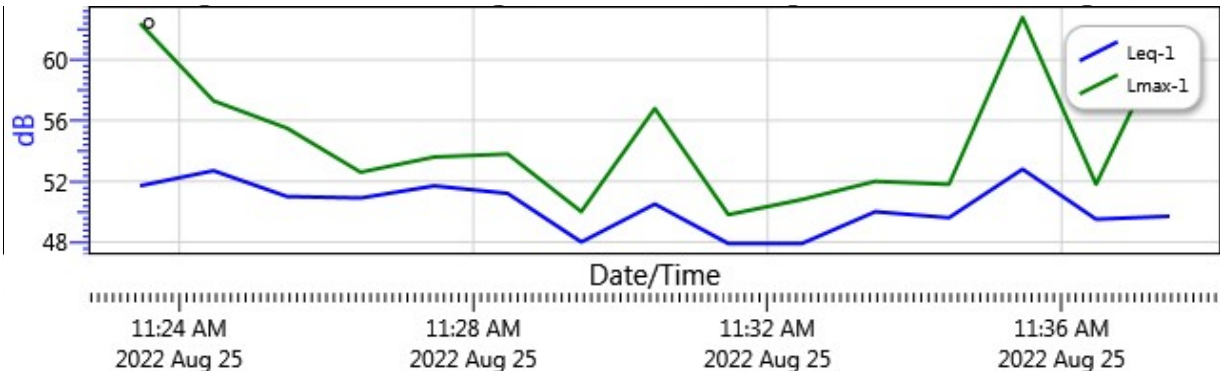
## Exceedance Chart

S271_BIN030017_25082022_154815: Exceedance Chart




## Logged Data Chart

S271_BIN030017_25082022_154815: Logged Data Chart



UltraSystems
environmental | management | planning

16431 Scientific Way
Irvine, CA 92618
949.788.4900

# Noise Measurement Report Form – Part A

Date: 08/25/2022 Day of Week: Thursday Time: 12:38pm Project Number: 7187

Monitoring Segment / Area: 4 Monitoring Site Address: 9800 Mesa Linda

Measurement Taken By: Michael / Erik of UltraSystems Environmental

Average Wind Speed: 3.2 mph [km/hr] Compass Heading (meter ⊥ to source) 166° S

Temp: 78.2 ° F Relative Humidity: ~~20.0~~ 26.7 % Compass Heading (into wind) 216° SW

Cloud Cover Class (1 = heavy overcast, 2 = lightly overcast, 3 = sunny) 3

Approximate distance of sound level meter from receptor location: 62ft.

Approximate distance of sound level meter from construction site: _____
(Leave Blank for Baseline Ambient)

Receptor Land Use (Check One): ☑ Residential ☐ Institutional ☐ Comm./Ind. ☐ Recreational

Sound Level Meter: Make and Model: Quest SoundPro DL-1-1/3 Serial Number: BINO 30017

Meter Setting: ☑ A-Weighted Sound Level (SLOW) ☐ A-Weighted Sound Level (FAST)

Measurement Start Time: 12:38pm Measurement End Time: 12:53pm

Total Measurement Time: 15 min Session File Name (e.g., S012): S273

Check the measurement purpose:

☑ Baseline condition ☐ Ongoing construction ☐ Caltrans ☐ Complaint response

## Measurement Results

| Measurement Type | Measured Levels (dB) |
|---|---|
| Calibration | Pre: 114.0 Post: 114.0 |
| $L_{eq\ (h)}$ | Slow: 71.5 Fast: |
| $L_{max}$ | Slow: 89.2 Fast: |
| $L_{90}$ | Slow: 51.9 Fast: |

**Field Notes:**

1. Traffic Noise from Main St
2. _____
3. _____

Noise Monitor's Signature: _____ Date: 08/25/22

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# Noise Measurement Report Form – Part B

Date: 08/25/22 Day of Week: Thursday Time: 12:38pm Project Number: 7187

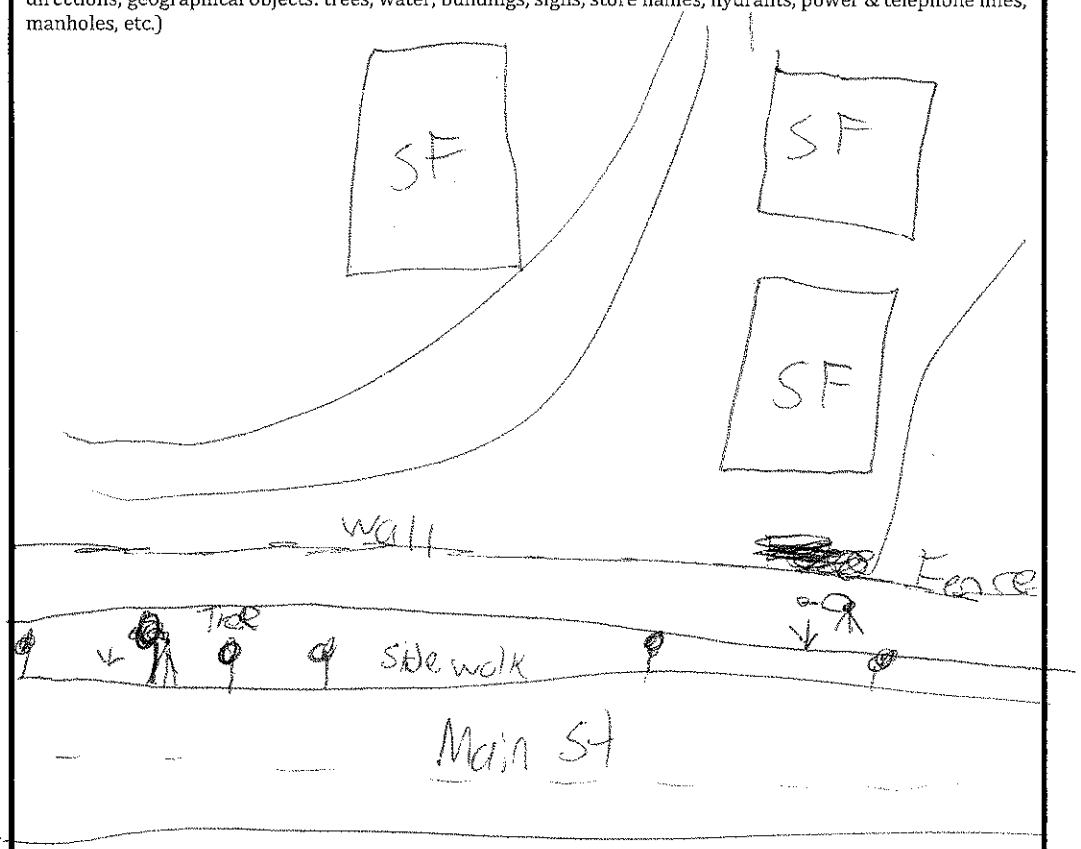
Monitoring Segment / Area: 4 Monitoring Site Address: 9800 Mesa Linda

## Site Map

**Plan View**

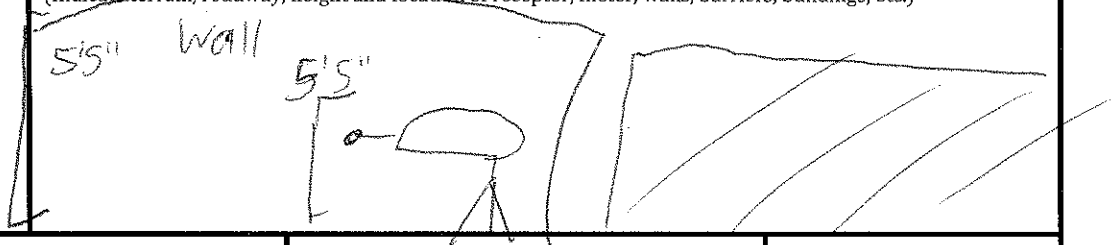
North Arrow (fill-in)

(Indicate site location, receptor location, meter location, distance in feet to landmarks, roadways, travel lane directions, geographical objects: trees, water, buildings, signs, store names, hydrants, power & telephone lines, manholes, etc.)




**Elevation View**

(Indicate ~~terrain, roadway, height and location~~ of receptor, meter, walls, barriers, buildings, etc.)




| Latitude: 34.426887° | Longitude: -117.892436° | Elevation: 3550 |
|---|---|---|

Noise Monitor's Signature: Date: 08/25/22

# Session Report

**8/25/2022**

## Information Panel

| | |
|---|---|
| Name | S273_BIN030017_25082022_154825 |
| Start Time | 8/25/2022 12:37:48 PM |
| Stop Time | 8/25/2022 12:52:48 PM |
| Device Name | BIN030017 |
| Model Type | SoundPro DL |
| Device Firmware Rev | R.13F |
| Comments | |

## Summary Data Panel

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 71.5 dB | L90 | 1 | 51.9 dB |
| Lmax | 1 | 89.2 dB | | | |
| Exchange Rate | 1 | 3 dB | Weighting | 1 | A |
| Response | 1 | SLOW | Bandwidth | 1 | OFF |
| Exchange Rate | 2 | 5 dB | Weighting | 2 | C |
| Response | 2 | FAST | | | |

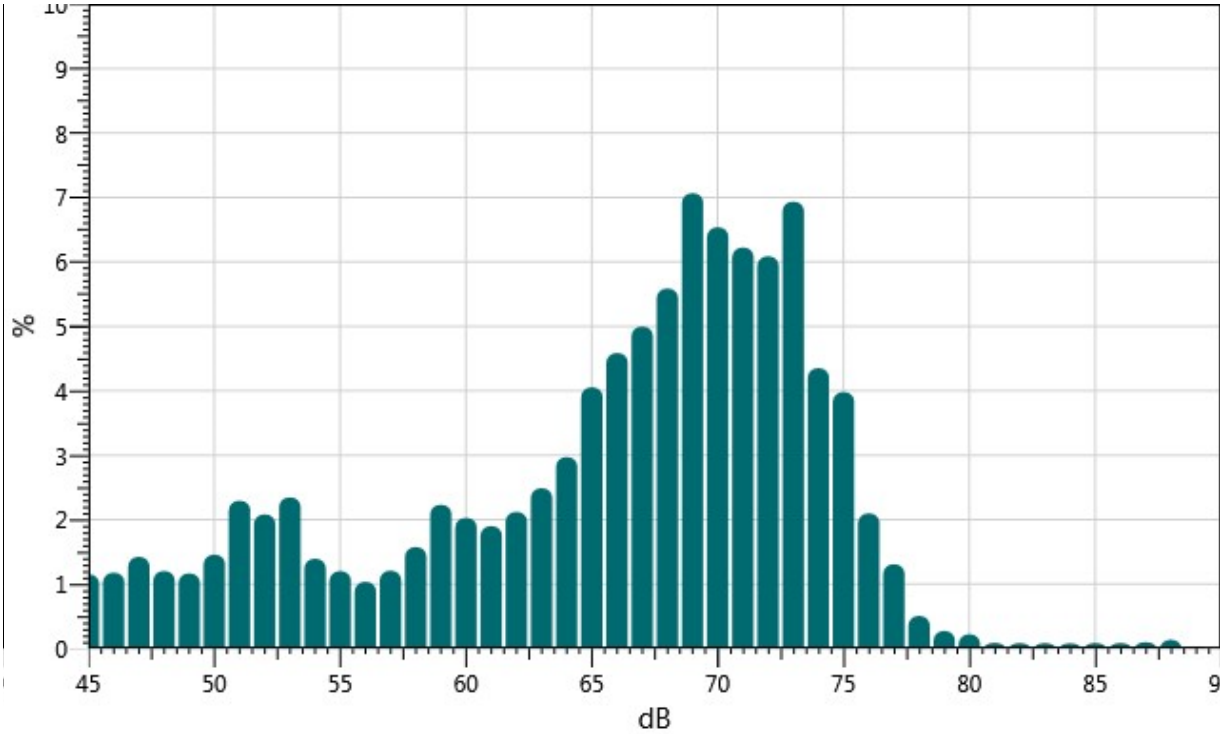
## Statistics Table

| dB: | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45: | 0.00 | 0.02 | 0.02 | 0.11 | 0.06 | 0.14 | 0.18 | 0.22 | 0.18 | 0.22 | 1.15 |
| 46: | 0.11 | 0.05 | 0.13 | 0.17 | 0.10 | 0.08 | 0.12 | 0.20 | 0.10 | 0.11 | 1.18 |
| 47: | 0.15 | 0.16 | 0.16 | 0.09 | 0.14 | 0.17 | 0.11 | 0.14 | 0.13 | 0.16 | 1.42 |
| 48: | 0.10 | 0.09 | 0.10 | 0.07 | 0.09 | 0.11 | 0.17 | 0.11 | 0.16 | 0.19 | 1.20 |
| 49: | 0.20 | 0.10 | 0.10 | 0.10 | 0.10 | 0.14 | 0.13 | 0.13 | 0.10 | 0.08 | 1.16 |
| 50: | 0.10 | 0.14 | 0.16 | 0.15 | 0.13 | 0.12 | 0.14 | 0.19 | 0.17 | 0.16 | 1.46 |
| 51: | 0.13 | 0.14 | 0.17 | 0.29 | 0.31 | 0.22 | 0.30 | 0.24 | 0.20 | 0.30 | 2.29 |
| 52: | 0.33 | 0.24 | 0.27 | 0.23 | 0.19 | 0.15 | 0.13 | 0.15 | 0.20 | 0.19 | 2.08 |
| 53: | 0.24 | 0.38 | 0.35 | 0.29 | 0.22 | 0.17 | 0.19 | 0.13 | 0.14 | 0.23 | 2.35 |
| 54: | 0.16 | 0.11 | 0.09 | 0.10 | 0.14 | 0.12 | 0.11 | 0.14 | 0.16 | 0.27 | 1.39 |
| 55: | 0.20 | 0.14 | 0.09 | 0.12 | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 1.20 |
| 56: | 0.12 | 0.13 | 0.10 | 0.11 | 0.11 | 0.08 | 0.09 | 0.08 | 0.10 | 0.10 | 1.03 |
| 57: | 0.10 | 0.10 | 0.12 | 0.16 | 0.15 | 0.12 | 0.14 | 0.09 | 0.11 | 0.13 | 1.21 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 58: | 0.13 | 0.14 | 0.10 | 0.27 | 0.21 | 0.15 | 0.14 | 0.12 | 0.18 | 0.14 | 1.57 |
| 59: | 0.15 | 0.17 | 0.15 | 0.17 | 0.17 | 0.20 | 0.31 | 0.34 | 0.28 | 0.29 | 2.23 |
| 60: | 0.22 | 0.17 | 0.16 | 0.15 | 0.20 | 0.20 | 0.23 | 0.19 | 0.27 | 0.24 | 2.03 |
| 61: | 0.24 | 0.27 | 0.13 | 0.22 | 0.19 | 0.20 | 0.18 | 0.17 | 0.15 | 0.15 | 1.90 |
| 62: | 0.17 | 0.19 | 0.26 | 0.22 | 0.17 | 0.21 | 0.23 | 0.26 | 0.19 | 0.23 | 2.12 |
| 63: | 0.19 | 0.19 | 0.22 | 0.22 | 0.28 | 0.28 | 0.27 | 0.26 | 0.25 | 0.33 | 2.49 |
| 64: | 0.30 | 0.41 | 0.22 | 0.26 | 0.26 | 0.27 | 0.29 | 0.31 | 0.33 | 0.32 | 2.97 |
| 65: | 0.31 | 0.35 | 0.30 | 0.40 | 0.37 | 0.53 | 0.51 | 0.43 | 0.47 | 0.38 | 4.05 |
| 66: | 0.37 | 0.40 | 0.40 | 0.43 | 0.46 | 0.49 | 0.50 | 0.48 | 0.52 | 0.54 | 4.59 |
| 67: | 0.52 | 0.60 | 0.40 | 0.62 | 0.47 | 0.46 | 0.53 | 0.50 | 0.47 | 0.43 | 5.00 |
| 68: | 0.57 | 0.61 | 0.69 | 0.57 | 0.56 | 0.56 | 0.55 | 0.48 | 0.50 | 0.50 | 5.59 |
| 69: | 0.60 | 0.53 | 0.56 | 0.64 | 0.87 | 0.80 | 0.78 | 0.85 | 0.68 | 0.75 | 7.06 |
| 70: | 0.72 | 0.71 | 0.52 | 0.63 | 0.66 | 0.67 | 0.66 | 0.65 | 0.60 | 0.72 | 6.54 |
| 71: | 0.66 | 0.85 | 0.70 | 0.61 | 0.62 | 0.63 | 0.55 | 0.53 | 0.54 | 0.53 | 6.22 |
| 72: | 0.70 | 0.62 | 0.57 | 0.59 | 0.50 | 0.56 | 0.60 | 0.65 | 0.65 | 0.65 | 6.09 |
| 73: | 0.74 | 0.76 | 0.57 | 0.72 | 0.78 | 0.79 | 0.66 | 0.65 | 0.62 | 0.64 | 6.93 |
| 74: | 0.53 | 0.54 | 0.53 | 0.58 | 0.48 | 0.48 | 0.27 | 0.31 | 0.35 | 0.28 | 4.35 |
| 75: | 0.39 | 0.36 | 0.34 | 0.60 | 0.36 | 0.32 | 0.42 | 0.37 | 0.46 | 0.36 | 3.98 |
| 76: | 0.28 | 0.20 | 0.11 | 0.14 | 0.15 | 0.24 | 0.23 | 0.22 | 0.25 | 0.27 | 2.10 |
| 77: | 0.31 | 0.23 | 0.19 | 0.13 | 0.12 | 0.09 | 0.05 | 0.05 | 0.06 | 0.07 | 1.31 |
| 78: | 0.10 | 0.08 | 0.04 | 0.05 | 0.05 | 0.06 | 0.04 | 0.03 | 0.03 | 0.03 | 0.51 |
| 79: | 0.04 | 0.09 | 0.02 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.27 |
| 80: | 0.02 | 0.02 | 0.02 | 0.03 | 0.08 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.22 |
| 81: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.09 |
| 82: | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.08 |
| 83: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.08 |
| 84: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.08 |
| 85: | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.09 |
| 86: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.09 |
| 87: | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.10 |
| 88: | 0.01 | 0.02 | 0.02 | 0.01 | 0.01 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.14 |
| 89: | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 |

## Statistics Chart

S273_BIN030017_25082022_154825: Statistics Chart

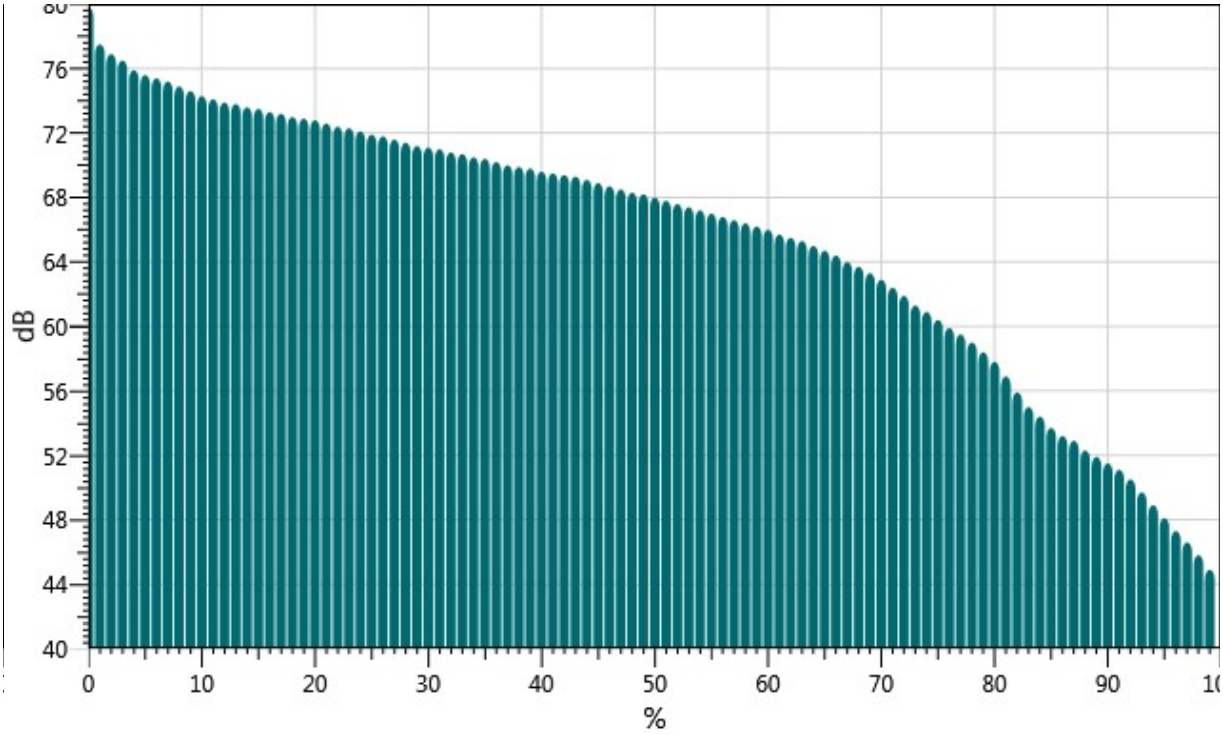



## Exceedance Table

| . | 0% | 1% | 2% | 3% | 4% | 5% | 6% | %7 | %8 | %9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0%: | | 79.8 | 77.5 | 76.9 | 76.5 | 75.9 | 75.6 | 75.4 | 75.2 | 74.9 |
| 10%: | 74.6 | 74.3 | 74.1 | 73.9 | 73.8 | 73.6 | 73.5 | 73.3 | 73.2 | 73.0 |
| 20%: | 72.9 | 72.8 | 72.6 | 72.4 | 72.3 | 72.1 | 71.9 | 71.8 | 71.6 | 71.4 |
| 30%: | 71.2 | 71.1 | 71.0 | 70.8 | 70.7 | 70.5 | 70.4 | 70.2 | 70.0 | 69.9 |
| 40%: | 69.8 | 69.6 | 69.5 | 69.4 | 69.3 | 69.1 | 68.9 | 68.7 | 68.5 | 68.3 |
| 50%: | 68.2 | 68.0 | 67.8 | 67.6 | 67.4 | 67.2 | 67.0 | 66.8 | 66.6 | 66.4 |
| 60%: | 66.2 | 66.0 | 65.7 | 65.5 | 65.3 | 65.0 | 64.7 | 64.4 | 64.0 | 63.7 |
| 70%: | 63.3 | 62.9 | 62.4 | 61.9 | 61.3 | 60.9 | 60.4 | 59.9 | 59.5 | 59.0 |
| 80%: | 58.4 | 57.8 | 56.9 | 55.9 | 55.0 | 54.4 | 53.7 | 53.2 | 52.9 | 52.3 |
| 90%: | 51.9 | 51.5 | 51.1 | 50.5 | 49.7 | 48.9 | 48.1 | 47.3 | 46.6 | 45.8 |
| 100%: | 44.9 | | | | | | | | | |

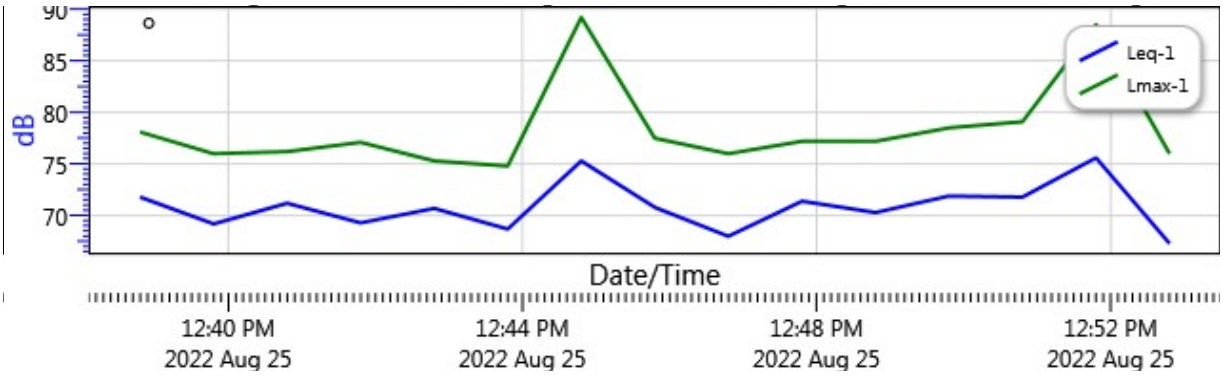
## Exceedance Chart

S273_BIN030017_25082022_154825: Exceedance Chart




## Logged Data Chart

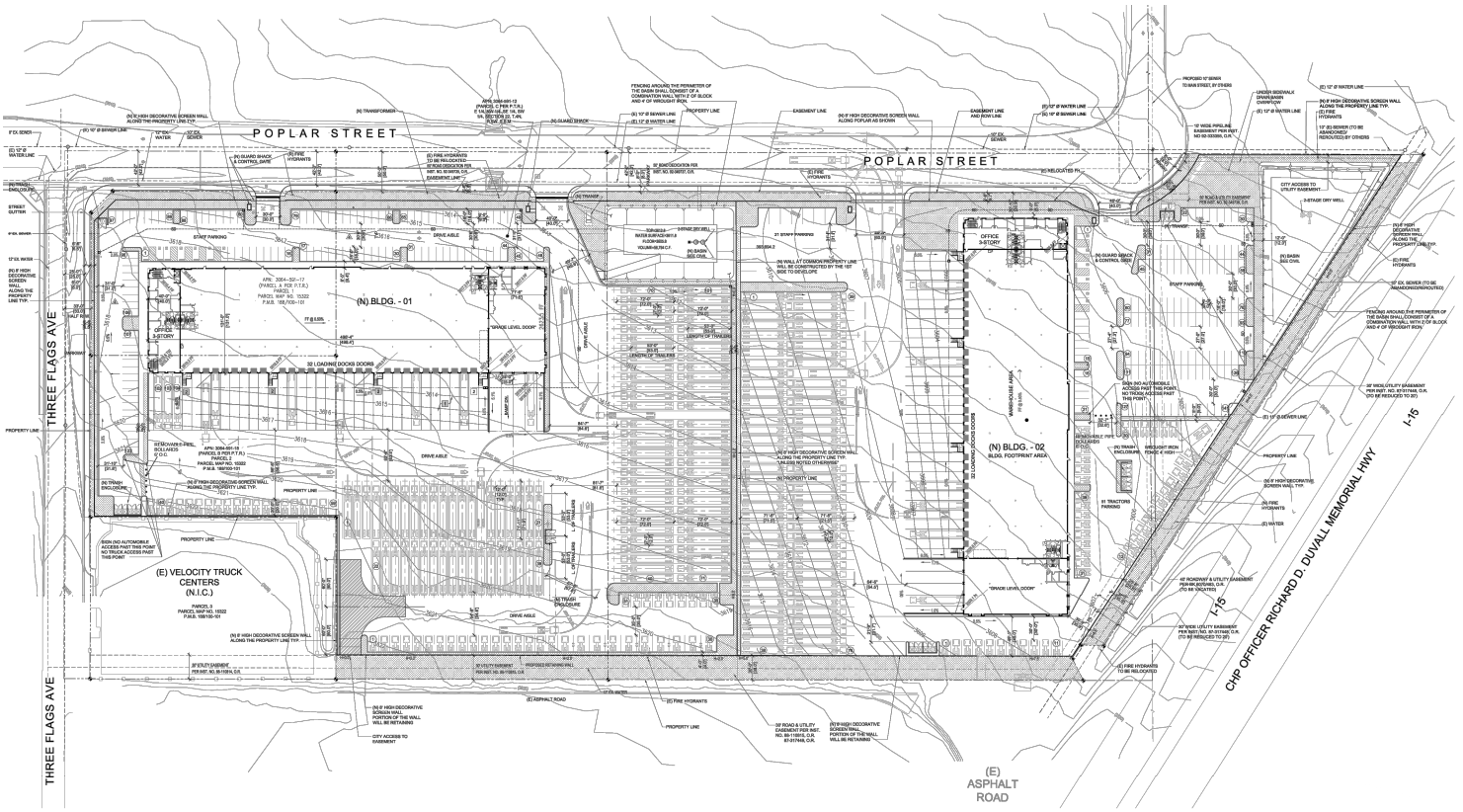
S273_BIN030017_25082022_154825: Logged Data Chart



# APPENDIX I

# TRAFFIC IMPACT ANALYSIS REPORT

# CARGO SOLUTION EXPRESS WAREHOUSE PROJECT
# REVISED TRAFFIC IMPACT ANALYSIS
# City of Hesperia, California



# CARGO SOLUTION EXPRESS WAREHOUSE PROJECT
# REVISED TRAFFIC IMPACT ANALYSIS
# City of Hesperia, California

**Prepared for:**

ULTRASYSTEMS ENVIRONMENTAL
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**Michael Torres, T.E.**




**May 23, 2025**
***(Revision to the January 9, 2025 Report)***

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# 1.0 Introduction

## 1.1 Purpose of Report & Study Objectives

The purpose of this traffic impact analysis and report is to evaluate and assess the proposed Cargo Solution Express Warehouse Project (hereinafter referred to as "project") from a traffic and circulation perspective. Furthermore, this analysis will determine whether the proposed project will significantly impact the environment.

This study has been conducted pursuant to the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020, and the California Environment Quality Act (CEQA) requirements. This study evaluates the potential traffic and environmental impacts associated with the proposed project in accordance with the respective thresholds of significance.

It is worth noting that this traffic impact analysis utilizes the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek, as a primary source for the data used to evaluate traffic operations. The findings and methodologies from the Dudek analysis serve as a foundation for the analysis presented in this report.

This study has been prepared in accordance with the scope of work approved by the City of Hesperia staff, which is contained in **Appendix A**. It should be noted that this iteration of the traffic study assesses a newly modified project description.

## 1.2 Project Description

The project site is located at the southeast corner of Three Flags Avenue and Poplar Street in the City of Hesperia, CA. The project site spans approximately 2.303 acres and is currently vacant.

The proposed project is planned to consist of the following land uses:

- One (1) warehouse building (Building No. 1) totaling 75,894 square feet (SF); and
- One (1) warehouse building (Building No. 2) totaling 75,894 square feet (SF).

The project is expected to open in 2026 and will be evaluated in one (1) single phase.

Access to the project is proposed via four (4) full-access unsignalized driveways located along Poplar Street:

- Driveway 1: Serves Building No. 1 warehouse for passenger vehicle traffic;
- Driveway 2: Serves Building No. 1 warehouse for truck traffic;
- Driveway 3: Serves Building No. 2 warehouse for truck traffic; and
- Driveway 4: Serves Building No. 2 warehouse for passenger vehicle traffic.

The project site location map is shown in **Exhibit 1-1**. **Exhibit 1-2** shows the proposed project's site plan.

## 1.3 Traffic Study Area & Analysis Scenarios

Exhibit 1-1 illustrates the project site's location map and traffic analysis study area.

The study area included in this analysis has been determined based on existing and future transportation facilities within the vicinity of the site where the project may contribute a significant amount of traffic. The study area consists of the following eleven (11) intersections listed below. The jurisdiction where each key study intersection is also identified.

Int #1. U.S. Route 395 at Main Street - Phelan Road [City of Hesperia, Caltrans];

Int #2. U.S. Route 395 at Poplar Street [City of Hesperia, Caltrans];

Int #3. Three Flags Avenue at Poplar Street [City of Hesperia];

Int #4. U.S. Route 395 at Three Flags Road - Three Flags Court [City of Hesperia, Caltrans];

Int #5. U.S. Route 395 at Joshua Street [City of Hesperia, Caltrans];

Int #6. I-15 Southbound Off-Ramp at Joshua Street [City of Hesperia, Caltrans];

Int #7. I-15 Southbound On-Ramp at Joshua Street [City of Hesperia, Caltrans];

Int #8. Project Access Driveway 1 at Poplar Street [City of Hesperia];

Int #9. Project Access Driveway 2 at Poplar Street [City of Hesperia];

Int #10. Project Access Driveway 3 at Poplar Street [City of Hesperia]; and

Int #11. Project Access Driveway 4 at Poplar Street [City of Hesperia].

Exhibit 1-1

# Location Map

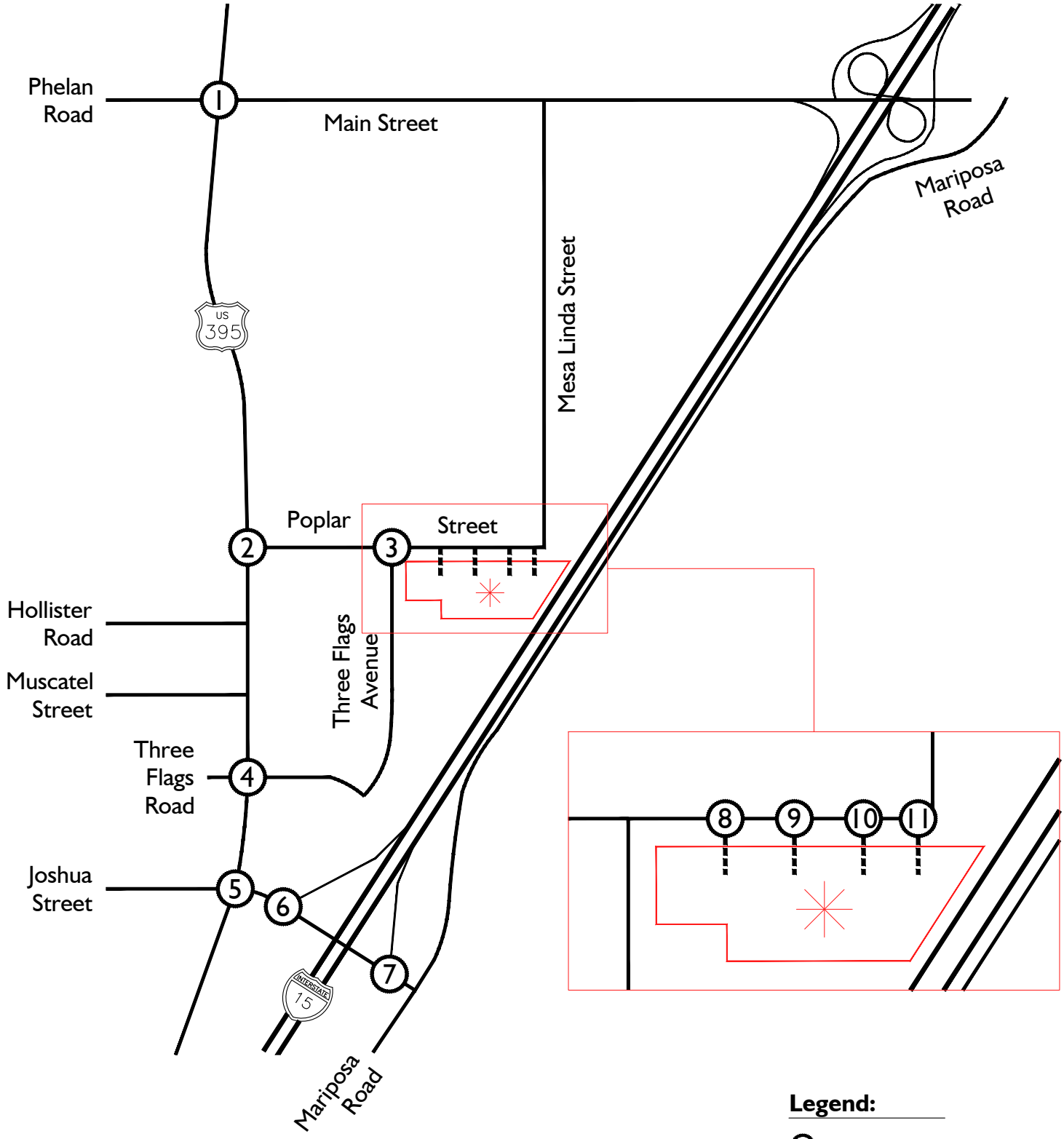
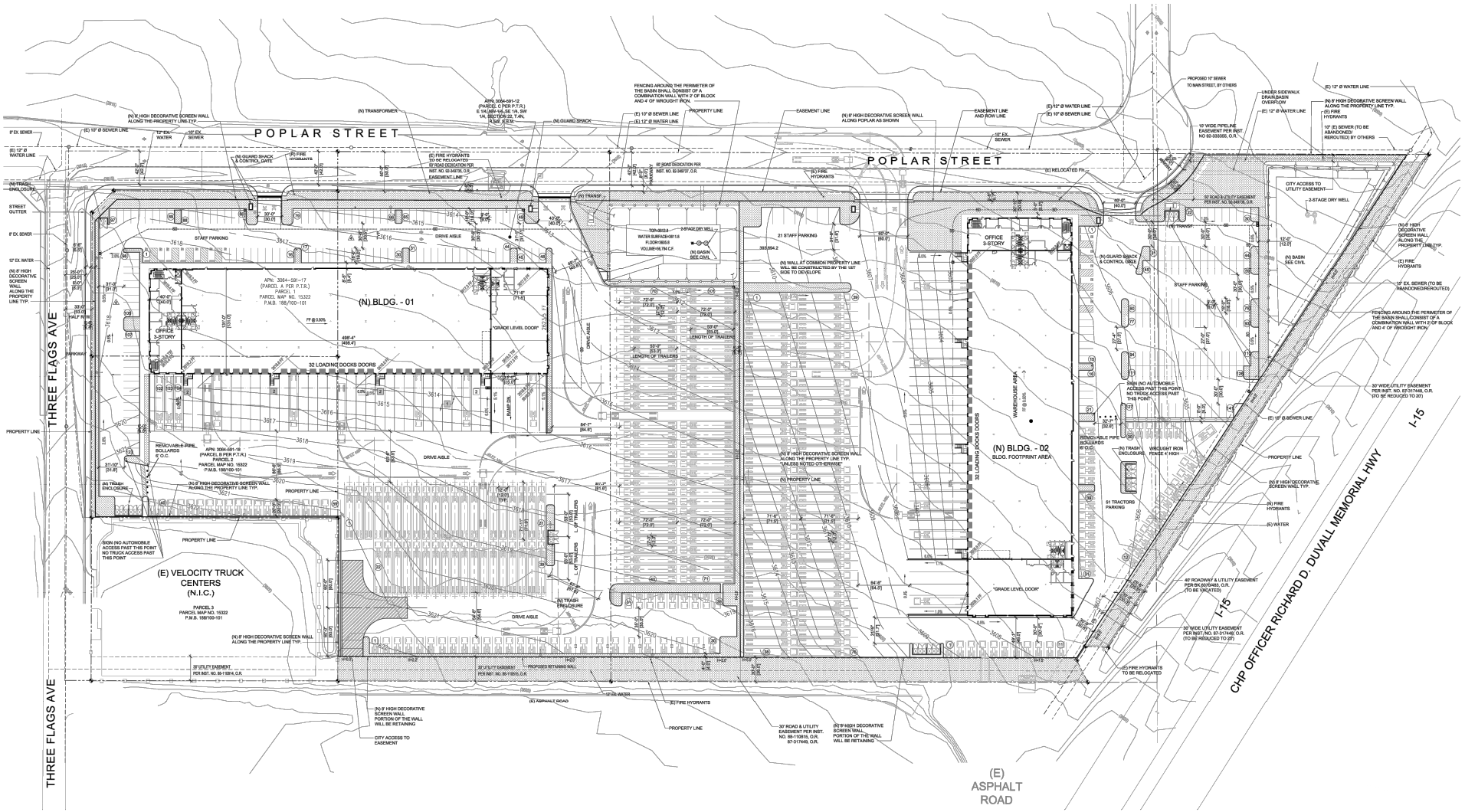


Exhibit 1-2

# Site Plan


POPLAR STREET
POPLAR STREET
THREE FLAGS AVE
THREE FLAGS AVE
(N) BLDG. - 01
(N) BLDG. - 02
BLDG. FOOTPRINT AREA
(E) VELOCITY TRUCK CENTERS (N.I.C.)
(E) ASPHALT ROAD
CHP OFFICER RICHARD D. DUVALL MEMORIAL HWY
I-15
I-15
32 LOADING DOCKS DOORS
OFFICE 3-STORY
21 STAFF PARKING
STAFF PARKING
WAREHOUSE AREA
51 TRACTORS PARKING
DRIVE AISLE
PROPERTY LINE
(N) TRANSF.
(N) GUARD SHACK & CONTROL GATE
(N) TRASH ENCLOSURE
(N) BASIN SEE CIVIL
(E) FIRE HYDRANTS
(E) WATER
CITY ACCESS TO EASEMENT
(N) 8' HIGH DECORATIVE SCREEN WALL ALONG THE PROPERTY LINE TYP.
(N) 6' HIGH DECORATIVE SCREEN WALL ALONG THE PROPERTY LINE TYP.
FENCING AROUND THE PERIMETER OF THE BASIN SHALL CONSIST OF A COMBINATION WALL WITH 2'-0" BLOCK AND 4' OF WROUGHT IRON
10' EX. SEWER (TO BE ABANDONED/REROUTED)
10' (E) SEWER (TO BE ABANDONED/ REROUTED) BY OTHERS
(E) 12" Ø WATER LINE
(E) 10" Ø SEWER LINE
(E) 12" Ø SEWER LINE
PROPOSED 10" SEWER TO MAIN STREET, BY OTHERS
UNDER SIDEWALK DRAIN,BASIN OVERFLOW
10' WIDE PIPELINE EASEMENT PER INST. NO 93-333356, O.R.
(E) RELOCATED FH
(E) 18" Ø SEWER LINE
(N) 18" Ø SEWER LINE
(E) 8" EX. SEWER
(E) 12" EX. WATER
(N) 8" EX. SEWER
(N) 12" EX. WATER
STREET GUTTER
(N) TRASH ENCLOSURE
(N) 8' HIGH DECORATIVE SCREEN WALL ALONG THE PROPERTY LINE TYP.
(N) 6' HIGH DECORATIVE SCREEN WALL ALONG THE PROPERTY LINE TYP.
(N) 8

The analysis evaluates traffic conditions of the study area under the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods:

- Existing Conditions
- Project Opening Year (2026) Without Project Conditions
- Project Opening Year (2026) With Project Conditions
- Horizon Year (2040) Without Project Conditions
- Horizon Year (2040) With Project Conditions

# 2.0 Analysis Methodologies, Performance Criteria, & Thresholds of Significance

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report in accordance with the City of Hesperia requirements. This section also discusses the applicable agency-established performance criteria and thresholds for requiring LOS improvements for the study facilities.

## 2.1 Study Intersection Peak Hour Level of Service Analysis Methodology

In accordance with the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020, the current Highway Capacity Manual must be used in the evaluation of traffic operations for both signalized and unsignalized intersections. During the preparation of this study, the Highway Capacity Manual 7th Edition (HCM 7) was utilized.

The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of level of service for interrupted flow (flow regulated by the existence of traffic control devices) are:

- **LOS A** (Free Flow / Insignificant Delays) describes traffic operations in which progression is exceptionally favorable or the cycle length is extremely short. Generally, LOS A operations for signalized intersections tend to result in most vehicles arriving during the green phase and traveling through the intersection without stopping.

- **LOS B** (Stable Operation / Minimal Delays) describes traffic operations in which progression slightly diminishes but is still considered highly favorable and the cycle length is short. Vehicles stop more often causing a marginal increase in average delay.

- **LOS C** (Stable Operation / Acceptable Delays) describes traffic operations in which progression is favorable and the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Many vehicles still pass through the intersection but a significant number of vehicles are stopping. Average delay is fair.

- **LOS D** (Approaching Unstable / Tolerable Delays) describes traffic operations in which progression is ineffective and/or cycle length is long. Considerable amount of vehicles stop and individual cycle failures are noticeable. Average delay is adequate.

- **LOS E** (Unstable Operation / Significant Delays) describes traffic operations in which progression is unfavorable and the cycle length is exceedingly long. Individual cycle failures are frequent. Average delay is high.

- **LOS F** (Forced Flow / Excessive Delays) describes traffic operations in which progression is extremely poor and the cycle length is extremely long. Most cycles fail to clear the queue. Average delay is vast.

### 2.1.1 HCM (7th Edition) Methodology

Level of service is typically dependent on the quality of traffic flow at the intersection along a roadway. The Highway Capacity Manual 7th Edition (HCM 7) expresses the level of service at an intersection in terms of delay time for various intersection approaches. The HCM 7 uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM 7 methodology.

For signalized intersections, average control delay per vehicle is used to determine the LOS.

For all-way stop-controlled intersections, average control delay per vehicle is also used to determine the LOS.

For intersections with stop control on the minor approach only, the calculation of LOS is dependent on the occurrence of gaps in the free-flow traffic movement of the major street, and the LOS is determined based on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

**Table 2-1** shows the level of service criteria based on the HCM 7 methodology.

**Table 2-1**

**HCM Intersection LOS & Delay Ranges**

| LOS | Average Control Delay Per Vehicle (Seconds) | |
|---|---|---|
| | Signalized | Unsignalized |
| A | 0.00 - 10.00 | 0.00 - 10.00 |
| B | 10.01 - 20.00 | 10.01 - 15.00 |
| C | 20.01 - 35.00 | 15.01 - 25.00 |
| D | 35.01 - 55.00 | 25.01 - 35.00 |
| E | 55.01 - 80.00 | 35.01 - 50.00 |
| F | > 80.00 | > 50.00 |

### 2.1.2 Analysis Parameters

For this study, HCM level of service conditions have been evaluated utilizing the HCM 7 methodology and PTV Vistro analysis software. All analysis parameters utilized adhere to the LOS analysis procedures and assumptions defined in the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020.

## 2.2 LOS Performance Criteria & Thresholds for Requiring LOS Improvements

The eleven (11) key study intersections fall under the jurisdiction of one or more of the following governing bodies:

- City of Hesperia
- Caltrans

Hence, this study evaluates the potential traffic impacts associated with the proposed project for each study intersection based on the performance criteria and thresholds of significance set forth by the respective jurisdiction(s).

### 2.2.1 City of Hesperia

The following goals and implementation policies referenced from the Circulation Element of the 2010 City of Hesperia General Plan has been identified to serve as performance criteria and thresholds of significance in the evaluation of Level of Service.

Goal CI-2: Develop and implement a City-wide Congestion Management Plan

- Implementation Policy CI-2.1
    - Strive to achieve and maintain a LOS D or better on all roadways and intersections: LOS E during peak hours shall be considered acceptable through freeway interchanges and major corridors (Bear Valley Road, Main Street/Phelan Road, Highway 395).
- Implementation Policy CI-2.2
    - Work with regional agencies which have authority over roadways within the City to ensure a minimum Level of Service D for roadways and a minimum Level of Service E for intersections.

As it pertains to identifying LOS deficiencies, the City of Hesperia traffic impact analysis guidelines state:

"Only project opening day and future scenarios with project require that traffic operational problems be mitigated to provide LOS E or better operation within the CMP network; however, the City of Hesperia requires mitigation to maintain the general plan goal of LOS D on all its roadways and will take precedence over the CMP requirements."

### 2.2.2 Caltrans

Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway System.

Caltrans has prepared the *Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, dated May 2020, as a response to Senate Bill 743 which eliminates automobile delay and LOS as the sole basis of determining impacts on the environment under the California Environmental Quality Act. The transportation impact study guide states that Caltrans will transition away from requesting LOS or other vehicle operations analyses of land use projects.

However, the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020 state the LOS threshold for State highway facilities will be the same as the jurisdiction where the facility is located but no greater than a 45 second average delay per vehicle in the peak hour (middle of LOS "D"). Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing LOS should be maintained.

### 2.2.3 Minimum Acceptable LOS Thresholds

Based on the discussed level of service performance criteria and thresholds of significance of the governing jurisdictional bodies, **Table 2-2** below identifies the minimum acceptable level of service for each study intersection.

**Table 2-2**

**Study Intersection LOS Performance Criteria**

| Study Intersection | | Acceptable LOS |
|---|---|---|
| 1. | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | E |
| 2. | U.S. Route 395 (NS) at Poplar Street (EW) | E |
| 3. | Three Flags Avenue (NS) at Poplar Street (EW) | D |
| 4. | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | E |
| 5. | U.S. Route 395 (NS) at Joshua Street (EW) | E |
| 6. | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | E |
| 7. | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | E |
| 8. | Project Access Driveway 1 (NS) at Poplar Street (EW) | D |
| 9. | Project Access Driveway 2 (NS) at Poplar Street (EW) | D |
| 10. | Project Access Driveway 3 (NS) at Poplar Street (EW) | D |
| 11. | Project Access Driveway 4 (NS) at Poplar Street (EW) | D |

# 3.0 Existing Conditions & Circulation System

This section provides a discussion of existing study area conditions and traffic volumes.

## 3.1 Existing Traffic Controls & Intersection Geometrics

The *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek, is one of the most recently performed traffic impact analyses in the study area. The I-15 Industrial Park project is located south of Main Street, north of Poplar Street, and adjacent to the proposed Cargo Solution Express Warehouse Project.

To ensure consistency between the traffic impact analysis prepared by Dudek and within this analysis, the lane configurations and traffic controls illustrated in Figure 16 of the Dudek report have been utilized in this analysis and is shown in **Exhibit 3-1**.

One exception, however, is the intersection of Three Flags Avenue at Poplar Street (i.e., Int. #3). This study intersection has been identified in this analysis to be a three-legged intersection with south, east, and west legs. Figure 16 of the Dudek report denotes this intersection as a four-legged intersection. The north leg is proposed to be Lassen Road, a two-lane undivided arterial to be located between Poplar Street and Sultana Street. This roadway is not currently built and therefore the lane configurations have been adjusted accordingly.

Exhibit 3-1 identifies the roadway conditions, number of through traffic lanes, and intersection controls for the study area. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service.

## 3.2 Existing Traffic Volumes

Existing conditions traffic volumes are based on the 2021 peak hour traffic volumes displayed on Figure 17 of the Dudek report. A two percent (2%) annual growth rate has been applied for three (3) years (i.e., 6% total growth) to the 2021 peak hour traffic volumes to establish existing (2024) traffic volumes for the study intersection.

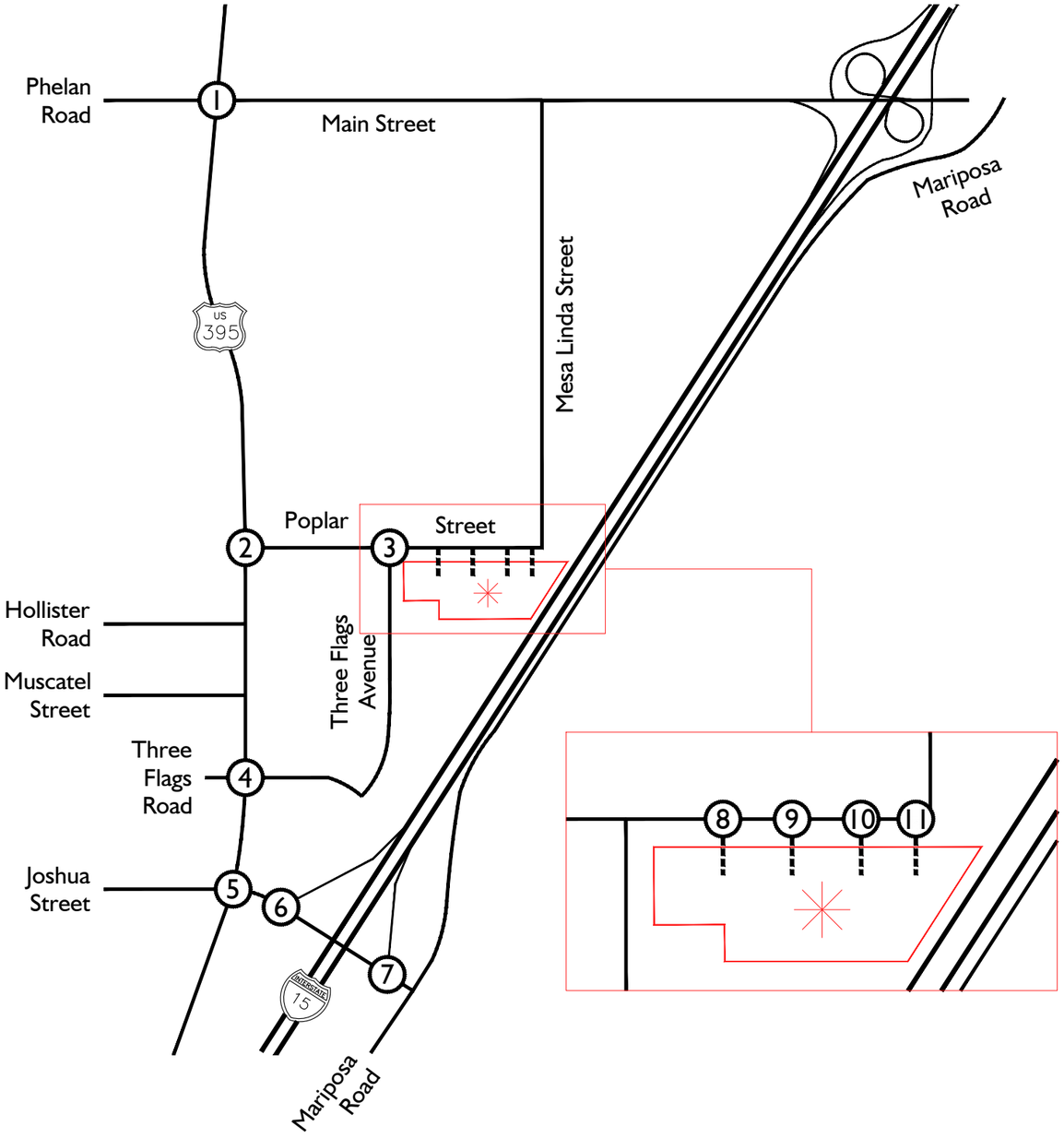
Existing Conditions (2024) weekday AM and PM peak hour volumes for the key study intersections are shown on **Exhibit 3-2**.

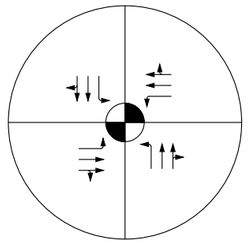
## 3.3 City of Hesperia General Plan Circulation Element

The City of Hesperia's Traffic Circulation Plan illustrates each roadway's street classification within the City of Hesperia and is shown in **Exhibit 3-3**.

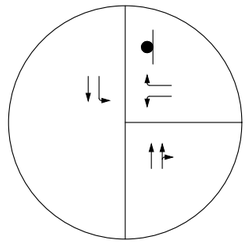
Exhibit 3-1

# Existing Traffic Controls & Intersection Geometrics

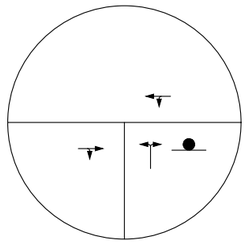


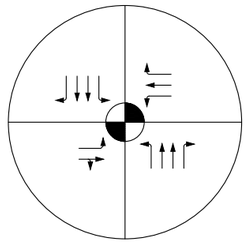
1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



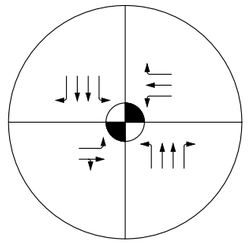
2. U.S. Route 395 (NS) at Poplar Street (EW)



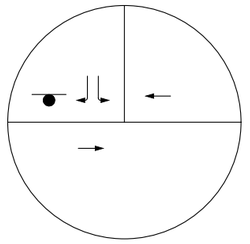
3. Three Flags Avenue (NS) at Poplar Street (EW)



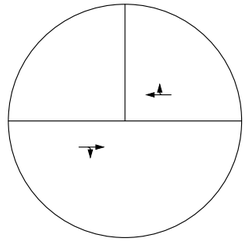
4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



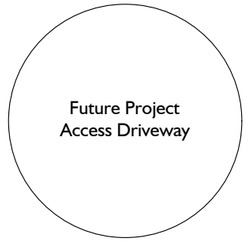
5. U.S. Route 395 (NS) at Joshua Street (EW)



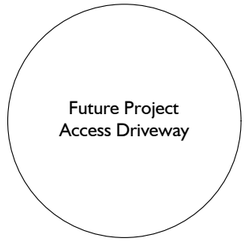
6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



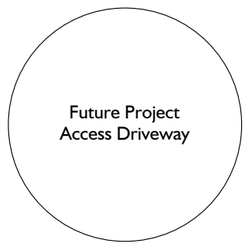
7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



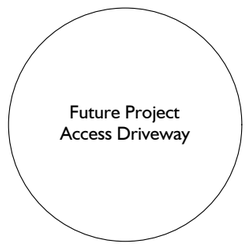

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



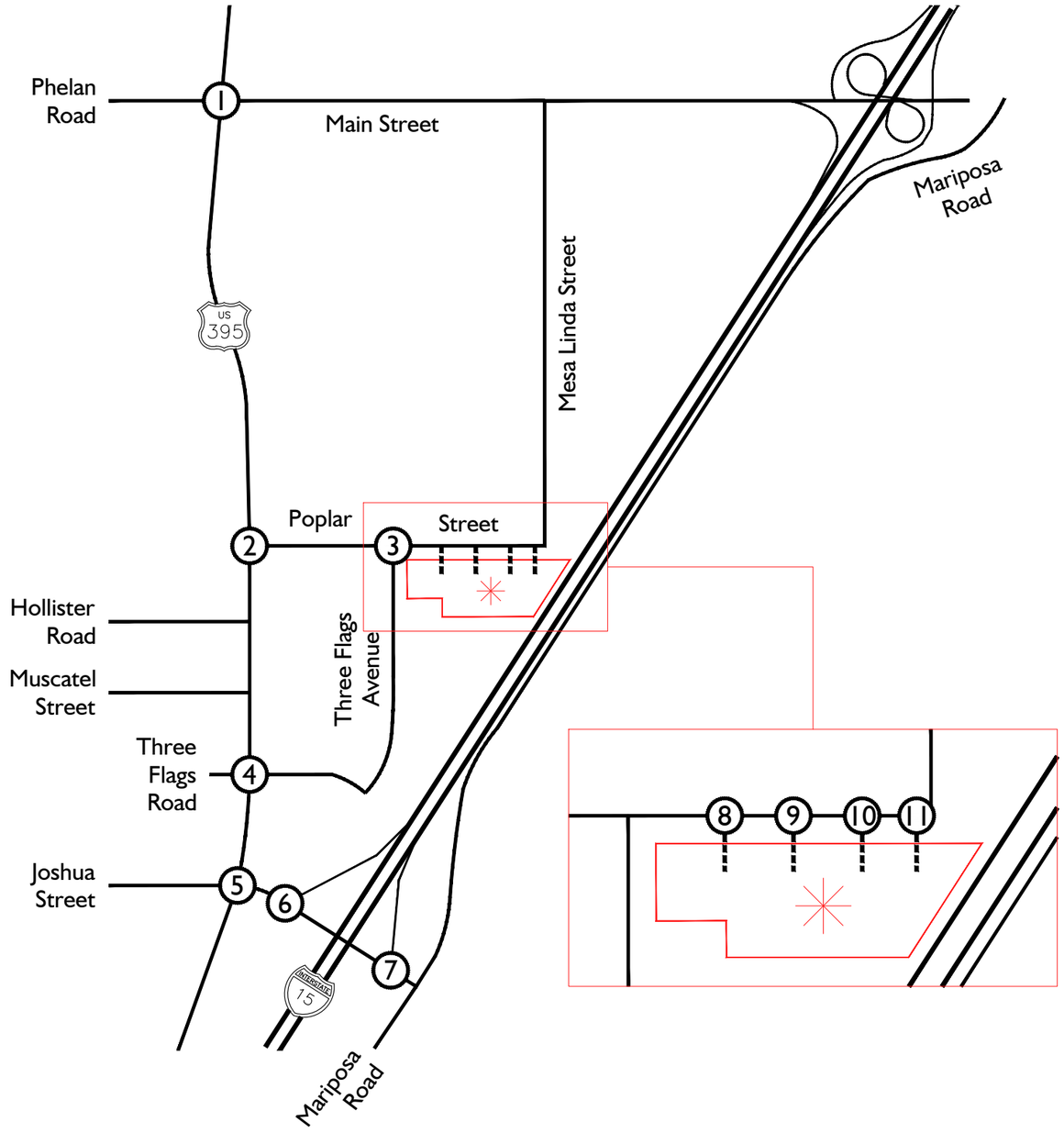

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

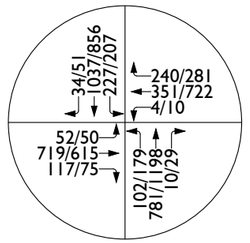
**Legend:**

- = Traffic Signal
- = Stop Sign
- = Study Area Intersection
- = Project Site
- = Project Access Driveway
- = Project Site Boundary

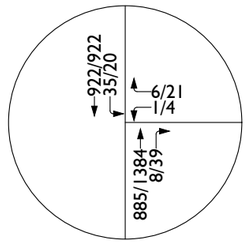
Exhibit 3-2

# Existing Conditions (2024) Traffic Volumes

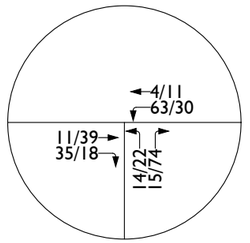


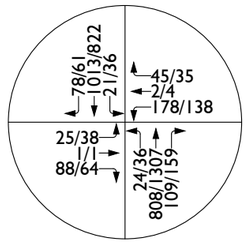

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



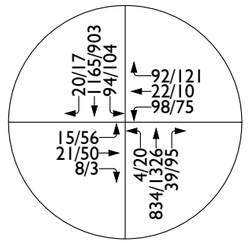

2. U.S. Route 395 (NS) at Poplar Street (EW)



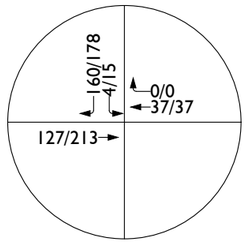

3. Three Flags Avenue (NS) at Poplar Street (EW)



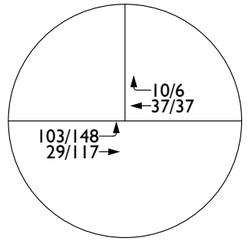

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



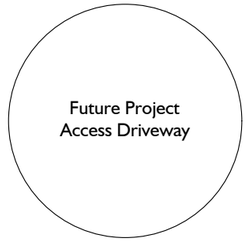

5. U.S. Route 395 (NS) at Joshua Street (EW)



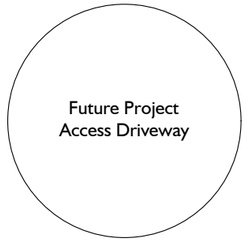

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



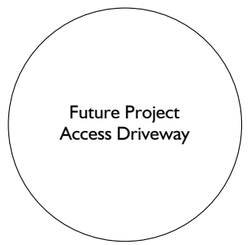

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



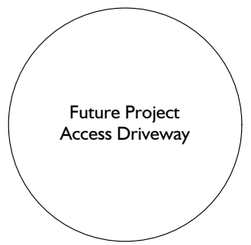

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



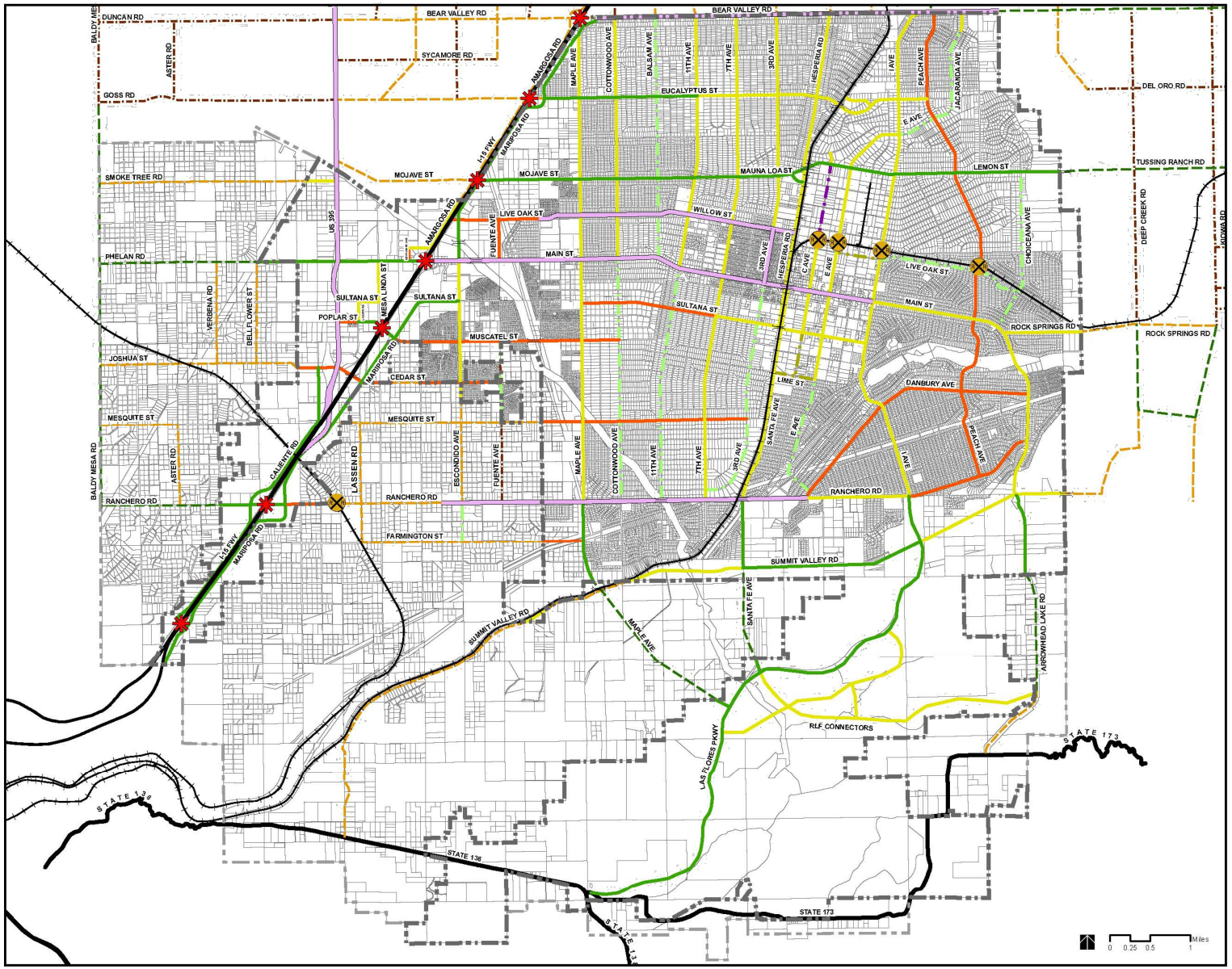

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

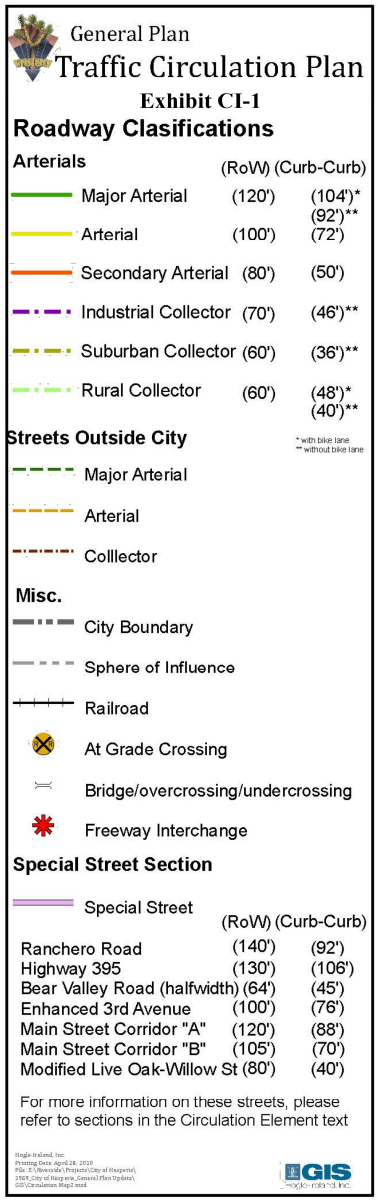
**Legend:**

10/20 = AM/PM Peak Hour Volumes
(1) = Study Area Intersection
✳ = Project Site
▬ ▬ = Project Access Driveway
— = Project Site Boundary

Exhibit 3-3

# City of Hesperia General Plan
# Traffic Circulation Plan




N

# 4.0 Projected & Future Traffic Volumes

This section of the report provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

## 4.1 Project Traffic Conditions

### 4.1.1 Project Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. Typically, trip generation rates from the latest Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) are used when calculating a proposed project's trip generation forecast. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

The project is proposing to construct two (2) 75,894 SF warehouse buildings. As such, ITE Land Use Code 150: Warehouse trip rates accurately reflect the project's land uses. Furthermore, ITE land use 150: Warehousing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour – (88.2% passenger cars & 11.8 % trucks)
- PM Peak Hour – (83.3% passenger cars & 16.7 trucks)
- Weekday Daily – (64.9% passenger cars & 35.1% trucks)

These truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix for "Without Cold Storage" uses: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

**Table 4-1** shows the trip generation rates utilized for the trip generation analysis of the proposed project land use as well as the project's forecast peak hour and daily traffic volumes.

As shown in Table 4-1, based on the trip generation rates and truck mix recommendations from SCAQMD, the proposed project is forecast to generate approximately 260 actual vehicle daily trips with 26 actual vehicle trips in the AM peak hour and 28 actual vehicle trips in the PM peak hour (i.e., no adjustments for truck traffic). After the application of appropriate passenger car equivalent (PCE) factors and ITE pass-by adjustments, the proposed project is forecast to generate approximately 402 daily PCE trips with 34 PCE trips in the AM peak hour and 36 PCE trips in the PM peak hour.

**Table 4-1**
**Project Trip Generation**
**Cargo Solutions Warehouse Project**

| Land Use | ITE Code[1] | Quanitity | Units[2] | Trip Type | AM Peak Hour | | | PM Peak Hour | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total | In | Out | Total | |
| **Trip Generation Rates** | | | | | | | | | | | |
| Warehouse | 150 | - - | TSF | All Vehicles | 0.13 | 0.04 | 0.17 | 0.05 | 0.13 | 0.18 | 1.71 |
| | | | | Trucks | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 | 0.03 | 0.60 |
| | | | | Passenger Cars | 0.12 | 0.03 | 0.15 | 0.03 | 0.12 | 0.15 | 1.11 |
| **Vehicle Trip Generation** | | | | | | | | | | | |
| Warehouse #1 | 150 | 75.894 | TSF | All Vehicles | 10 | 3 | 13 | 4 | 10 | 14 | 130 |
| Warehouse #2 | 150 | 75.894 | TSF | All Vehicles | 10 | 3 | 13 | 4 | 10 | 14 | 130 |
| ***Total Project Non PCE-Trip Generation*** | | | | | ***20*** | ***6*** | ***26*** | ***8*** | ***20*** | ***28*** | ***260*** |
| **Vehicle Mix Trip Generation[3]** | | | | | | | | | | | |
| **Warehouse # 1** | | | | | | | | | | | |
| Passenger Vehicles | | | | | 9 | 2 | 11 | 3 | 9 | 12 | 84 |
| 2-Axle Trucks (16.7% of Total Trucks) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 3-Axle Trucks (20.7% of Total Trucks) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4-Axle Trucks (62.5% of Total Trucks) | | | | | 1 | 1 | 2 | 1 | 1 | 2 | 29 |
| ***Total Trucks[4]*** | | | | | ***1*** | ***1*** | ***2*** | ***1*** | ***1*** | ***2*** | ***46*** |
| ***Total Non-PCE Trip Generation*** | | | | | ***10*** | ***3*** | ***13*** | ***4*** | ***10*** | ***14*** | ***130*** |
| **Warehouse #2** | | | | | | | | | | | |
| Passenger Vehicles | | | | | 9 | 2 | 11 | 3 | 9 | 12 | 84 |
| 2-Axle Trucks (16.7% of Total Trucks) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 3-Axle Trucks (20.7% of Total Trucks) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4-Axle Trucks (62.5% of Total Trucks) | | | | | 1 | 1 | 2 | 1 | 1 | 2 | 29 |
| ***Total Trucks[4]*** | | | | | ***1*** | ***1*** | ***2*** | ***1*** | ***1*** | ***2*** | ***46*** |
| ***Total Non-PCE Trip Generation*** | | | | | ***10*** | ***3*** | ***13*** | ***4*** | ***10*** | ***14*** | ***130*** |
| **PCE Trip Generation[5,6]** | | | | | | | | | | | |
| **Warehouse #1** | | | | | | | | | | | |
| Passenger Vehicles (PCE = 1.0) | | | | | 9 | 2 | 11 | 3 | 9 | 12 | 84 |
| 2-Axle Trucks (PCE = 1.5) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 3-Axle Trucks (PCE = 2.0) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4-Axle Trucks (PCE = 3.0) | | | | | 3 | 3 | 6 | 3 | 3 | 6 | 87 |
| ***Total PCE Trip Generation (Warehouse #1)*** | | | | | ***12*** | ***5*** | ***17*** | ***6*** | ***12*** | ***18*** | ***201*** |
| **Warehouse #2** | | | | | | | | | | | |
| Passenger Vehicles (PCE = 1.0) | | | | | 9 | 2 | 11 | 3 | 9 | 12 | 84 |
| 2-Axle Trucks (PCE = 1.5) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 3-Axle Trucks (PCE = 2.0) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4-Axle Trucks (PCE = 3.0) | | | | | 3 | 3 | 6 | 3 | 3 | 6 | 87 |
| ***Total PCE Trip Generation (Warehouse #1)*** | | | | | ***12*** | ***5*** | ***17*** | ***6*** | ***12*** | ***18*** | ***201*** |
| ***Total Project PCE-Trip Generation*** | | | | | ***24*** | ***10*** | ***34*** | ***12*** | ***24*** | ***36*** | ***402*** |

1 Source: ITE Trip Generation Manual (11th Edition, 2021).

2 TSF = Thousand Square Feet.

3 The truck fleet mix is based on the South Coast Air Quality Manaagement District's (SCAQMD) recommended truck fleet mix normalized percentages, by axle type, utilizing the "Without Cold Storage" building type.

4 The total truck percentages are based on the ITE Trip Generation Manual (11th Edition, 2021) recommended percentages based on land use type for the AM peak, PM peak hour, and

5 Recommended PCE Factors per City of Hesperia Traffic Impact Analysis Guidelines for Vehicles Miles Traveled (VMT) and Level of Service Assessment (LOS), dated July 2020.

6 PCE = Passenger Car Equivalent.

### 4.1.2 Project Trip Distribution & Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site and the proximity to the regional freeway system.

The proposed project shares similar land use types with the I-15 Industrial Park Project. As a result, the proposed project trip distribution has been developed to account for both passenger vehicles and trucks generated by the proposed project in a manner consistent with the trip distributions recommended in the Dudek study.

The following trip distribution exhibits are provided:

**Exhibit 4-1**: Project Inbound Trip Distribution – Passenger Vehicles

**Exhibit 4-2**: Project Outbound Trip Distribution – Passenger Vehicles

**Exhibit 4-3**: Project Inbound Trip Distribution – Trucks

**Exhibit 4-4**: Project Outbound Trip Distribution – Trucks

### 4.1.3 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic-reducing potential of public transit and other modes is significant. However, the traffic projections in this study are conservative as modal split reductions to the traffic volumes via the use of public transit and alternative transportation are not applied to the projections. With the implementation of transit services and the provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced significantly.

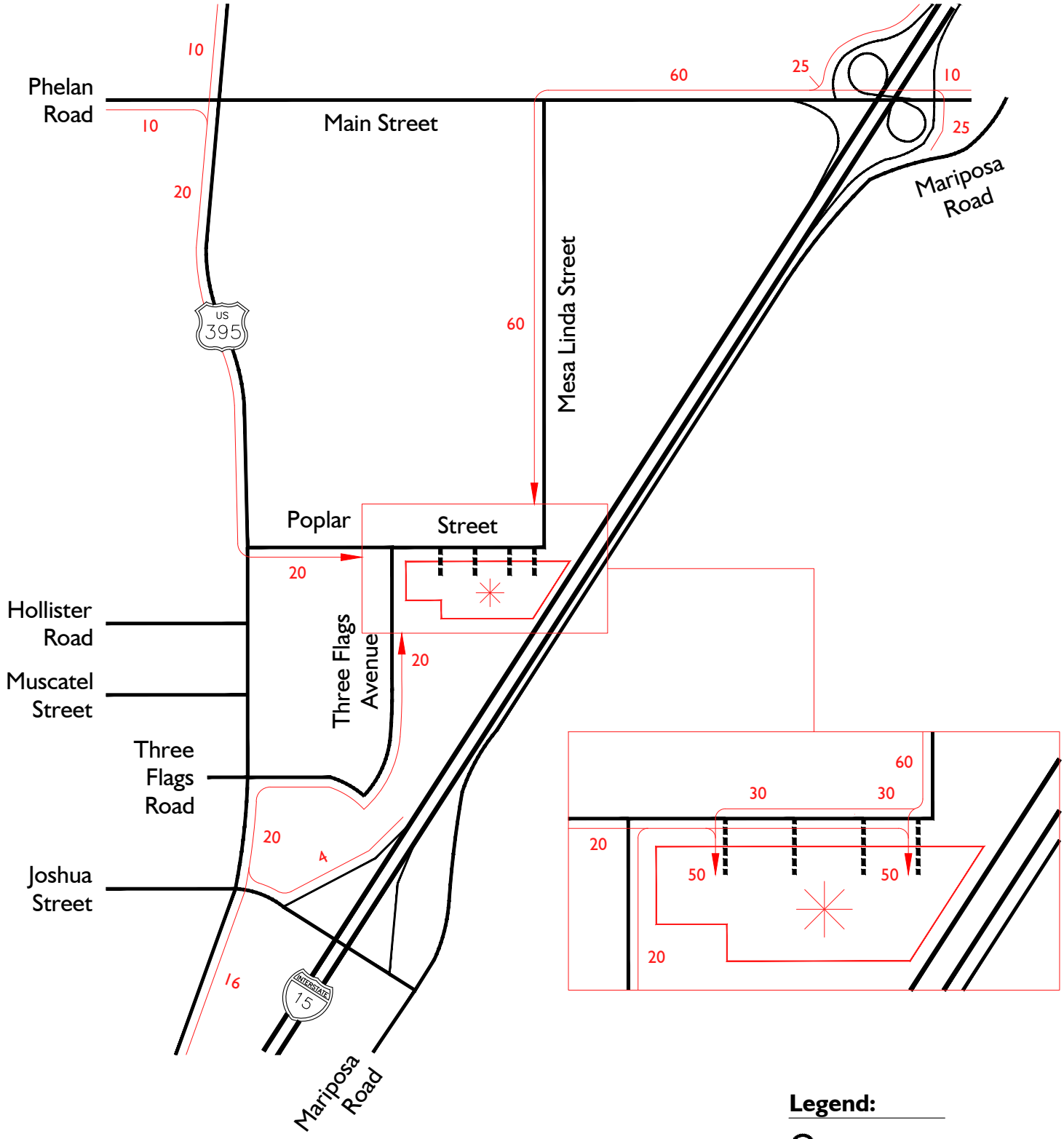
### 4.1.4 Project Peak Hour Traffic Volumes

The assignment of project traffic to the adjoining roadway system is based upon the project's trip generation, trip distribution, and arterial highway and local street systems that would be in place by the time of initial occupancy of the site.

The following exhibits illustrate the project traffic volumes during the Weekday AM and PM peak hours:

Exhibit 4-1

# Project Inbound Trip Distribution - Passenger Vehicles




**Legend:**

- ① = Study Area Intersection
- ✳ = Project Site
- = Project Access Driveway
- = Project Site Boundary

N

Exhibit 4-2

# Project Outbound Trip Distribution - Passenger Vehicles

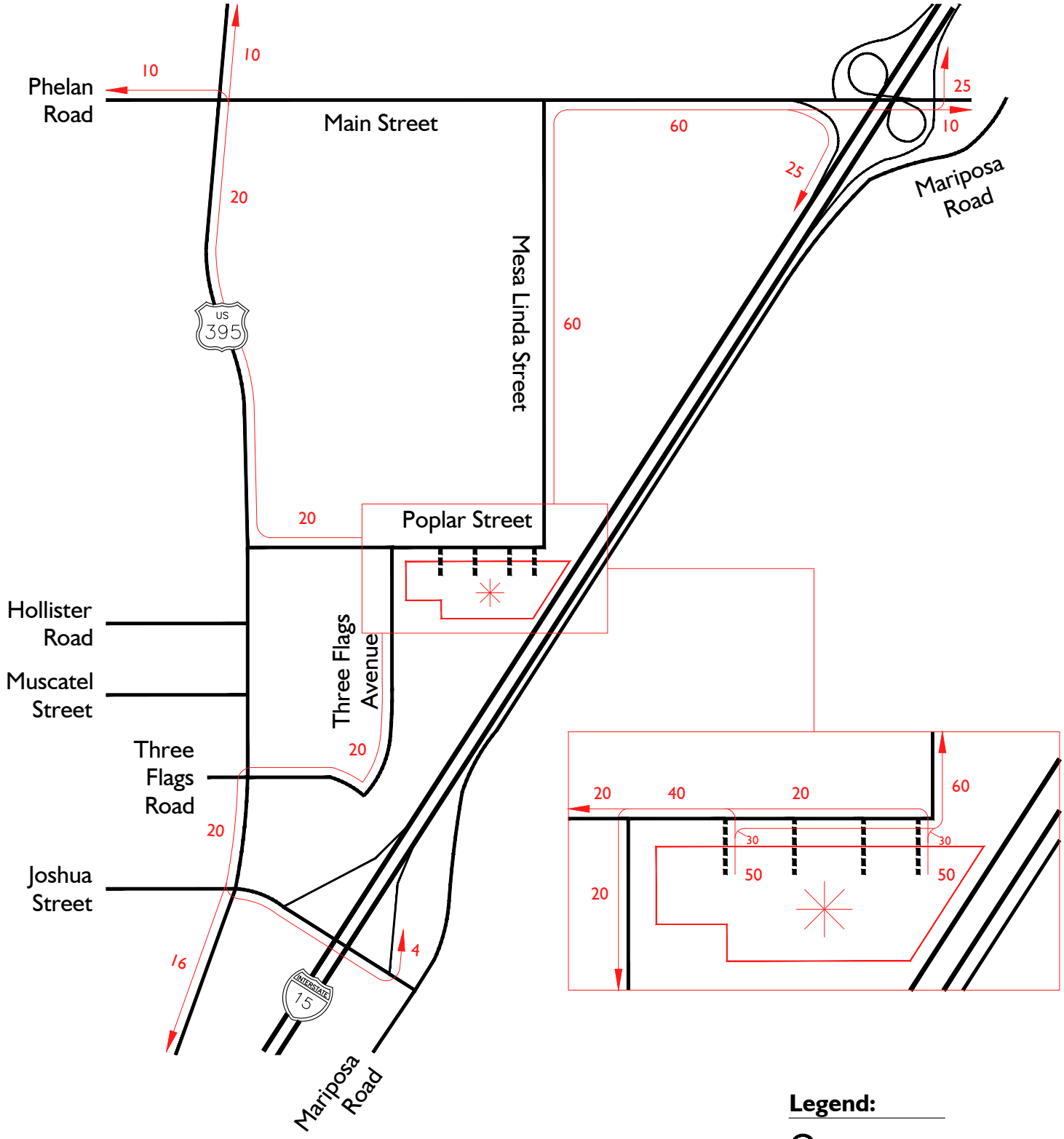
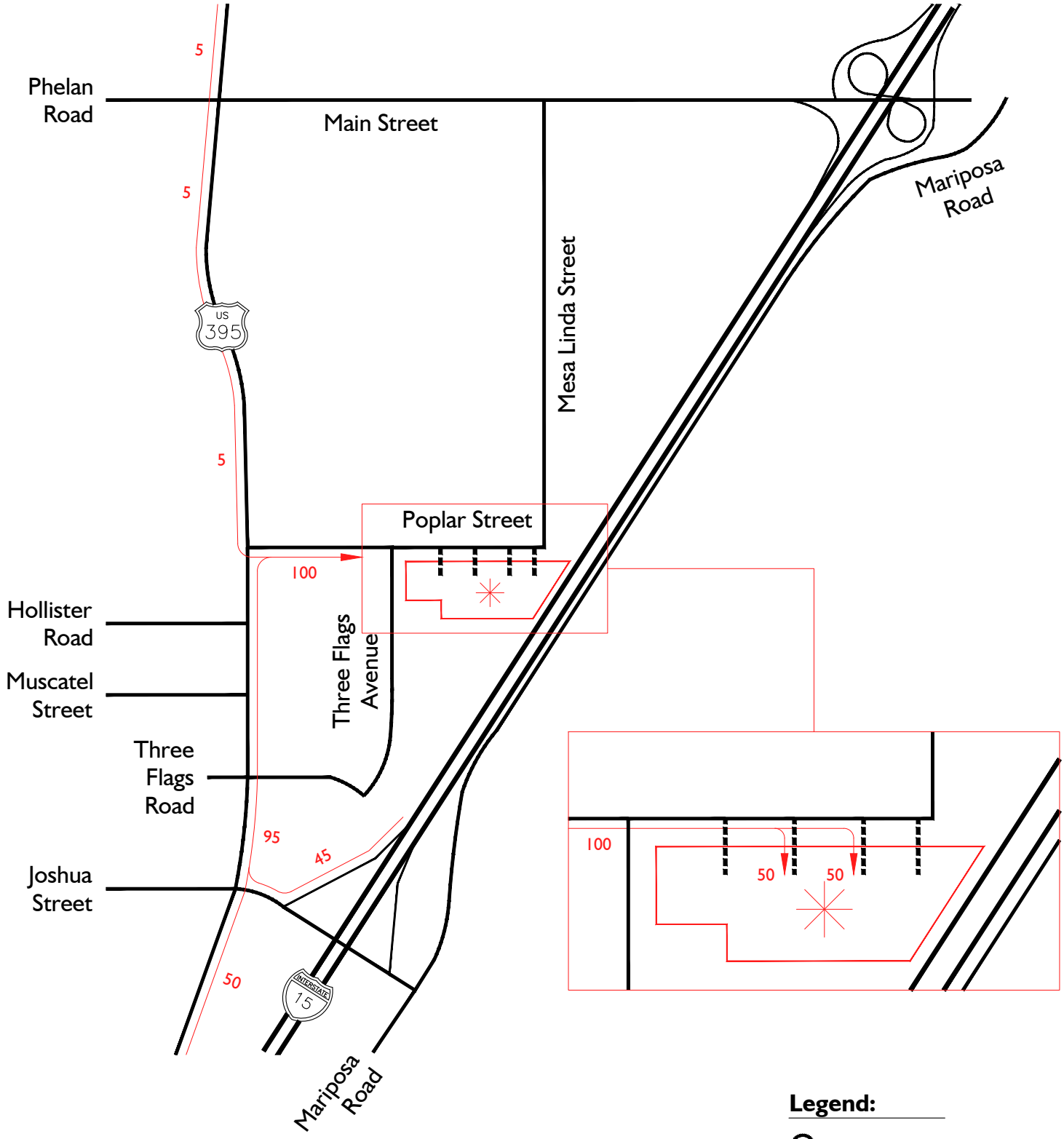


Exhibit 4-3

# Project Inbound Trip Distribution - Trucks



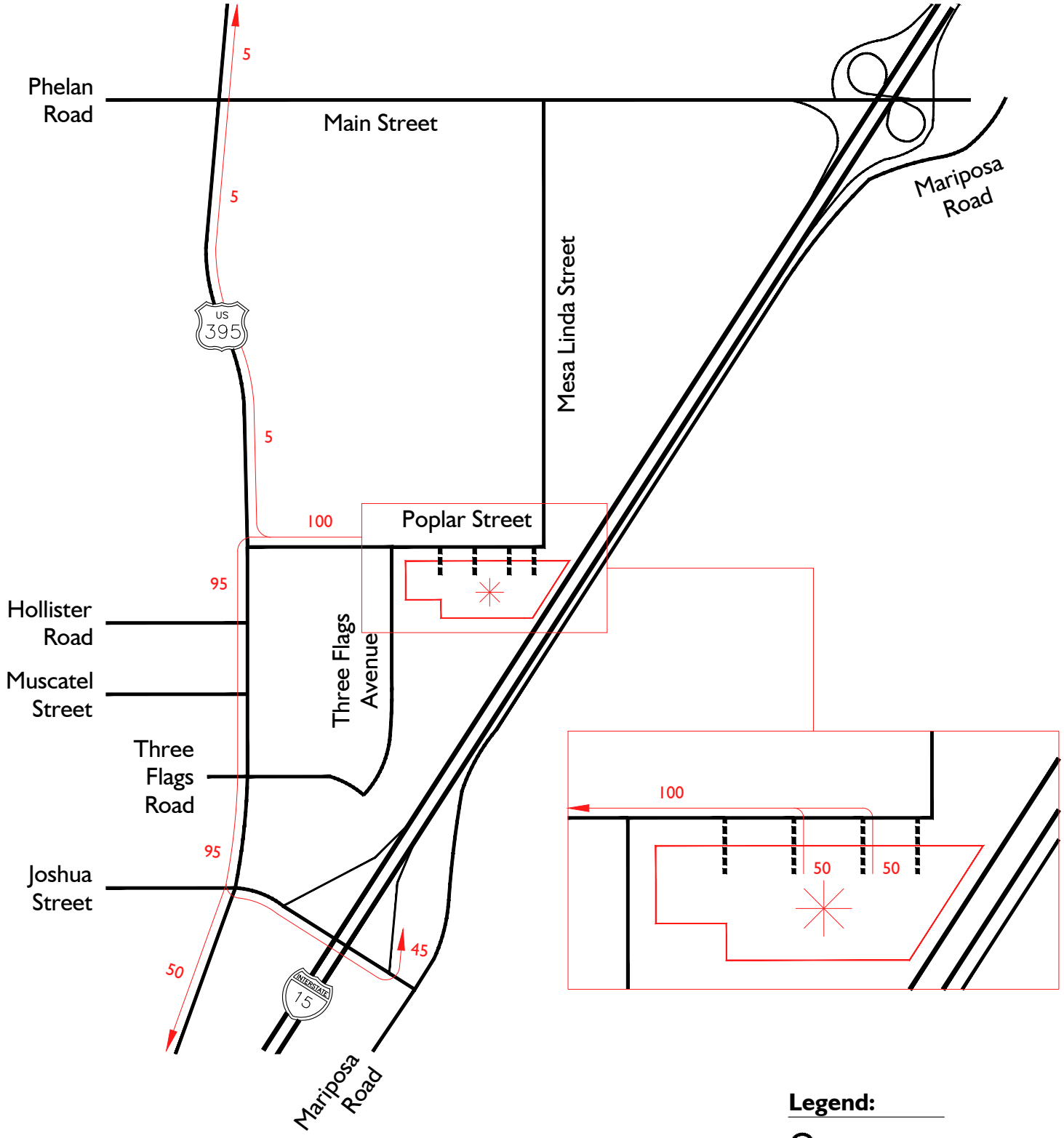

**Legend:**

- ① = Study Area Intersection
- ✳ = Project Site
- = Project Access Driveway
- = Project Site Boundary

N

Exhibit 4-4

# Project Outbound Trip Distribution - Trucks




**Legend:**

- ① = Study Area Intersection
- ✳ = Project Site
- = Project Access Driveway
- = Project Site Boundary

N

- **Exhibit 4-5**: Passenger Car Project Traffic Volumes
- **Exhibit 4-6**: Truck Project Traffic Volumes
- **Exhibit 4-7**: Total Project (Passenger Cars + Trucks) Traffic Volumes

## 4.2 Background Traffic

### 4.2.1 Method of Projection

To assess future conditions, existing traffic is combined with project traffic and area-wide growth. As directed by City staff, a two percent (2%) annual growth rate has been applied to existing (2024) traffic volumes to account for area-wide/ambient growth in the study area.

This annual growth rate has been applied over a 2-year period, from the existing conditions year of 2024 to project opening year of 2026, resulting in a total growth of 4%, to account for ambient growth.

### 4.2.2 Cumulative Projects Traffic Volumes

This traffic analysis accounts for traffic generated from future projects in the vicinity of the study area. Cumulative project traffic documented in the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek, has been reviewed and incorporated into this study. Moreover, this analysis includes the net increase in trips resulting from the I-15 Industrial Park Project considering it as a cumulative project (i.e., 799 AM peak hour trips, 774 PM peak hour trips, & 7,280 Daily trips).

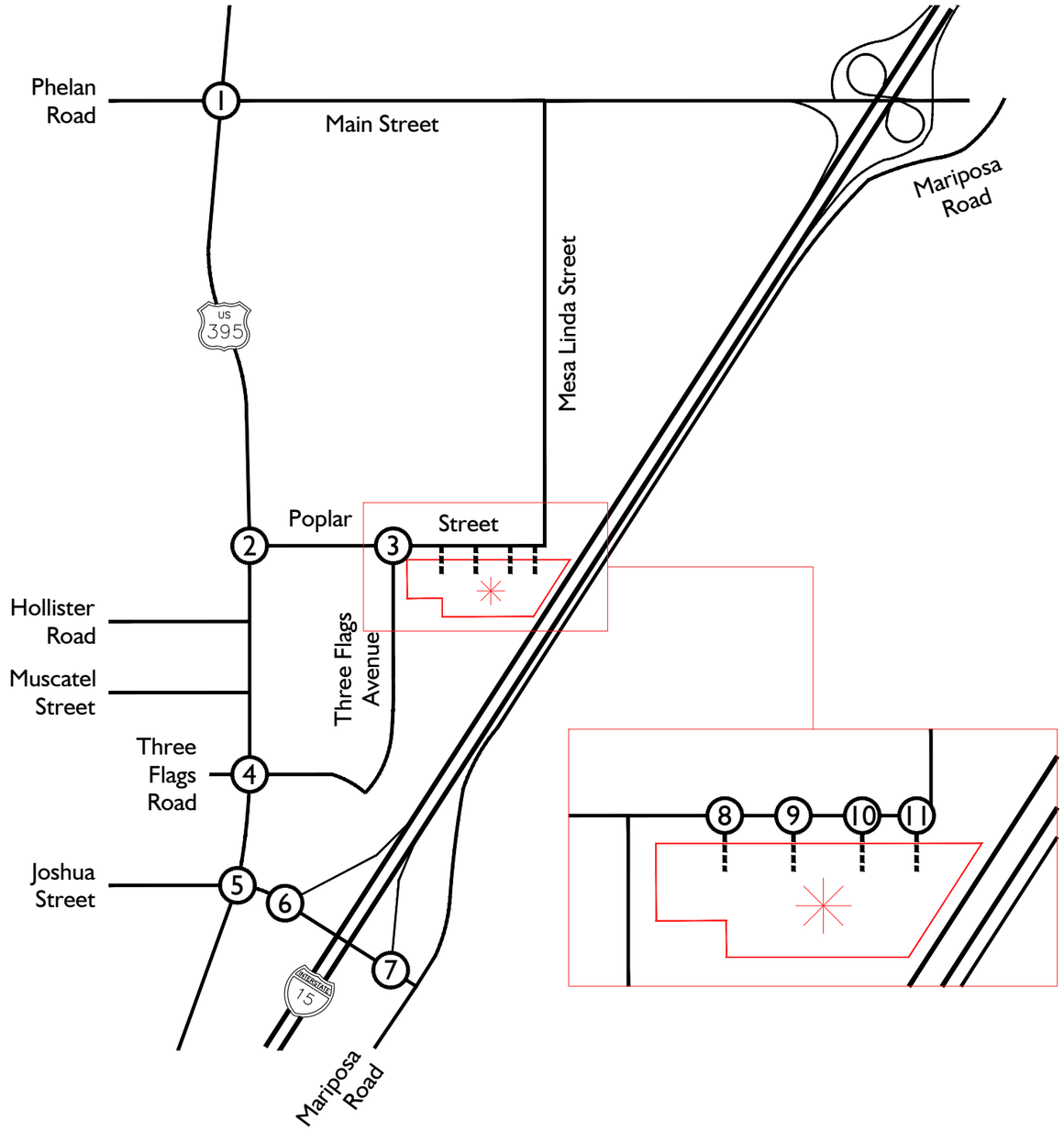
**Table 4-2** identifies the cumulative projects referenced from the I-15 Industrial Park Project study. Furthermore, Table 4-2 shows the corresponding weekday daily and peak hour trip generation of the cumulative projects utilized in this analysis.

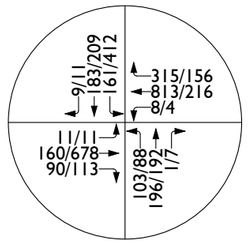
Cumulative projects traffic volumes are shown in **Exhibit 4-8**.

In reality, some of the cumulative projects may be downsized, may have already been partially constructed, or may not be developed by the proposed project's opening year (i.e., 2026). Additionally, many of the related projects have been or will be subject to a variety of mitigation measures that will reduce the potential environmental impacts associated with those projects. However, those mitigation measures have not been considered in projecting the environmental impact of the related projects.

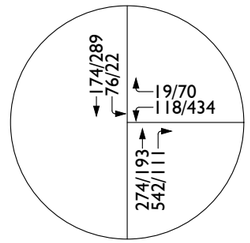
Exhibit 4-8

# Cumulative Projects Traffic Volumes

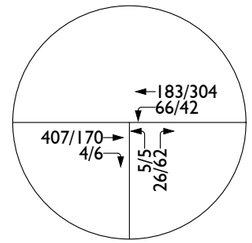


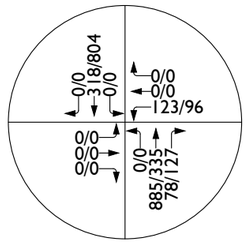

1. U.S. Route 395 (NS) at
Main Street - Phelan Road (EW)



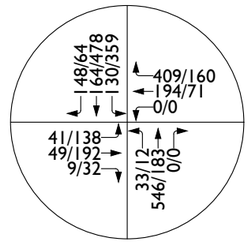

2. U.S. Route 395 (NS) at
Poplar Street (EW)



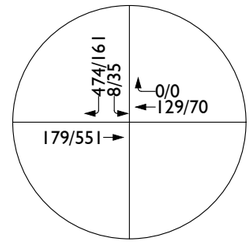

3. Three Flags Avenue (NS) at
Poplar Street (EW)



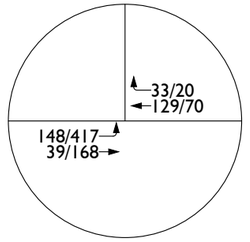

4. U.S. Route 395 (NS) at
Three Flags Road - Three Flags Court (EW)



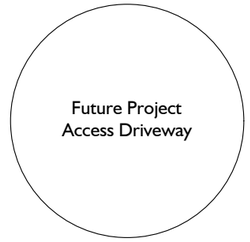

5. U.S. Route 395 (NS) at
Joshua Street (EW)



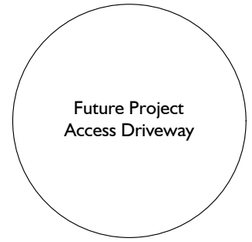

6. I-15 Southbound Off-Ramp (NS) at
Joshua Street (EW)



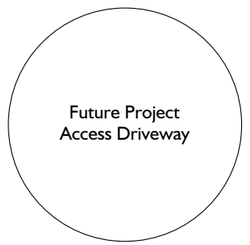

7. I-15 Southbound On-Ramp (NS) at
Joshua Street (EW)



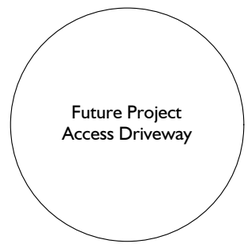

8. Project Access Driveway 1 (NS) at
Poplar Street (EW)




9. Project Access Driveway 2 (NS) at
Poplar Street (EW)




10. Project Access Driveway 3 (NS) at
Poplar Street (EW)



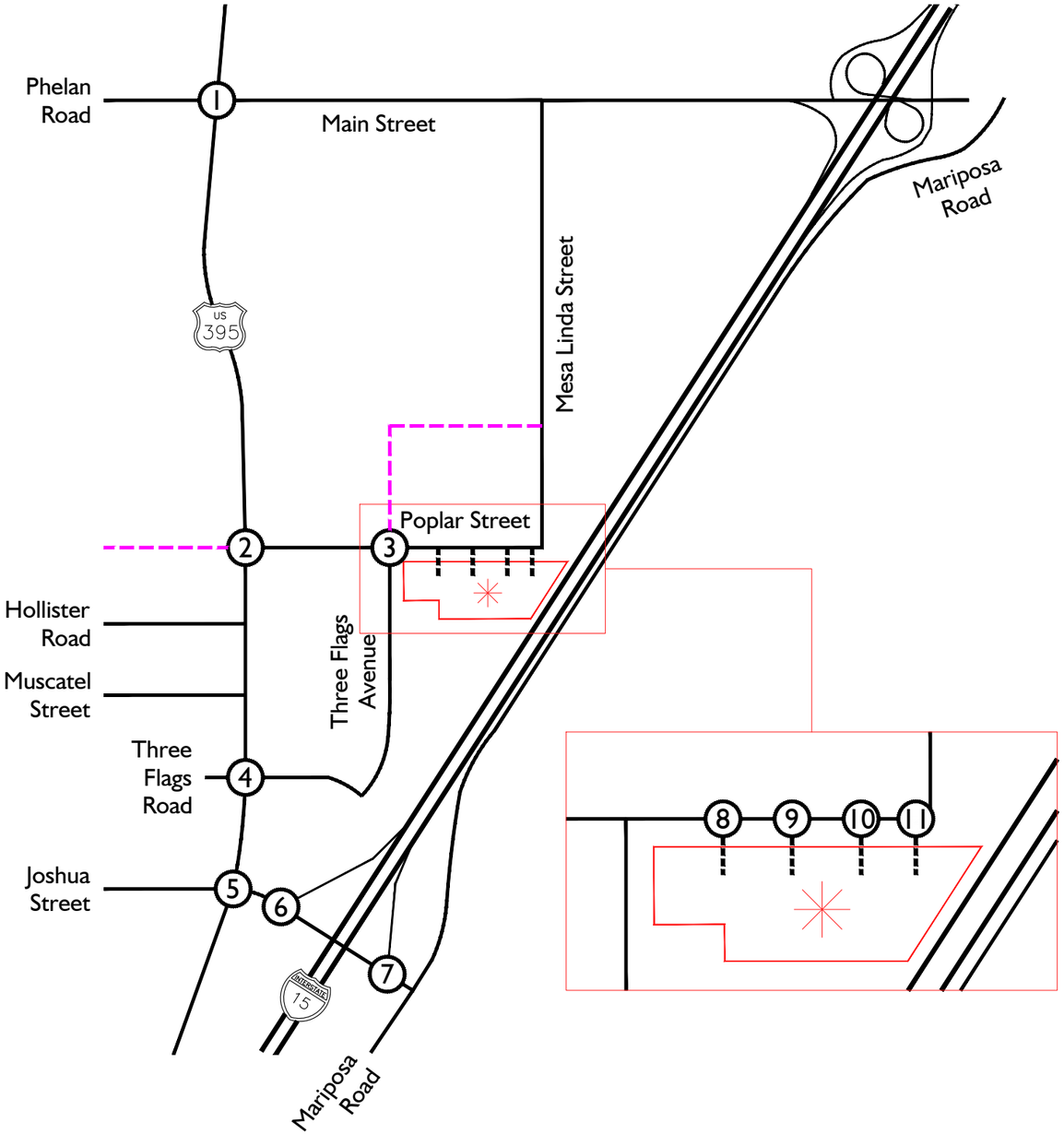

11. Project Access Driveway 4 (NS) at
Poplar Street (EW)

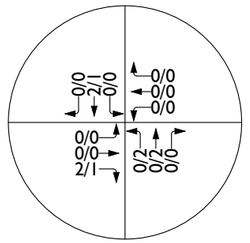
**Legend:**

10/20 = AM/PM Peak Hour Volumes
(1) = Study Area Intersection
✳ = Project Site
▬ = Project Access Driveway
— = Project Site Boundary

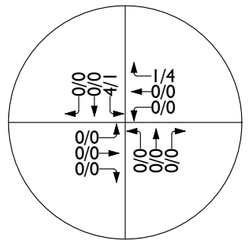
Exhibit 4-5

# Passenger Car Project Traffic Volumes

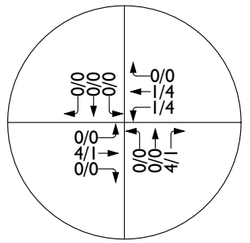


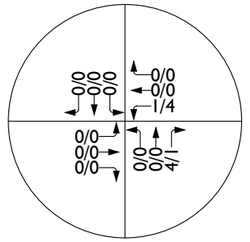

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



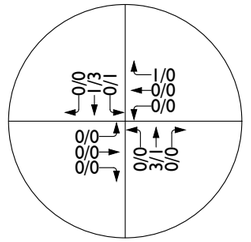

2. U.S. Route 395 (NS) at Poplar Street (EW)



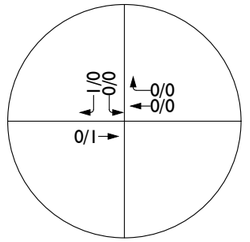

3. Three Flags Avenue (NS) at Poplar Street (EW)



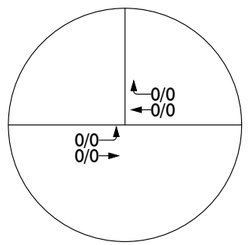

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



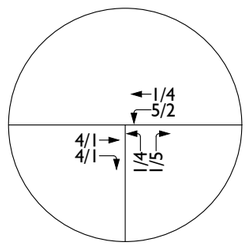

5. U.S. Route 395 (NS) at Joshua Street (EW)



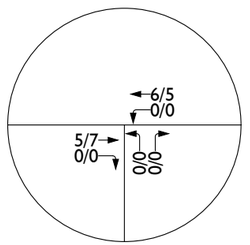

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



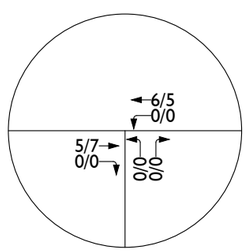

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



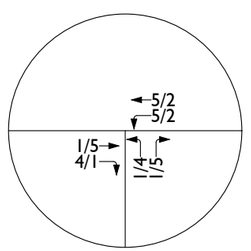

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



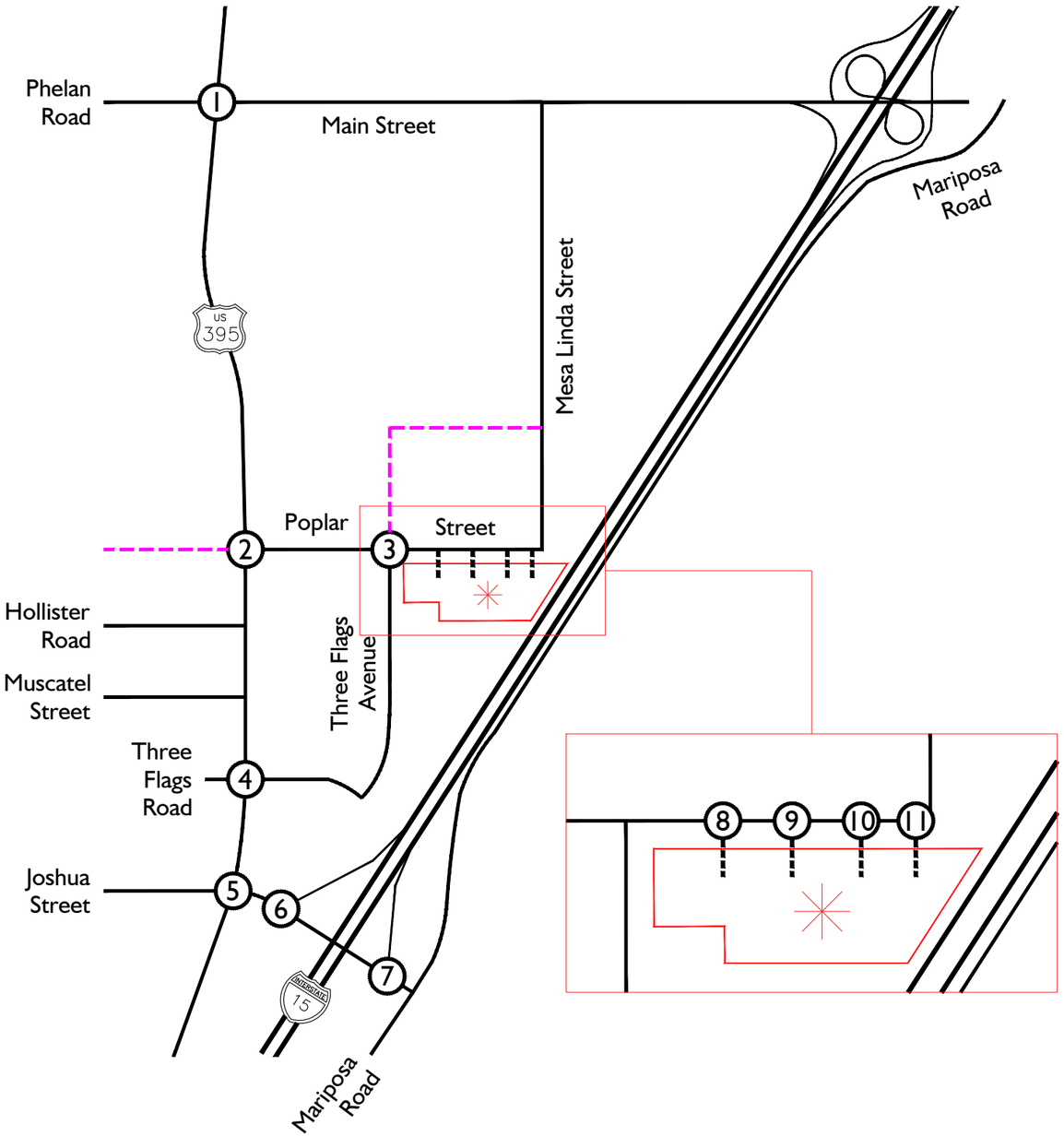

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

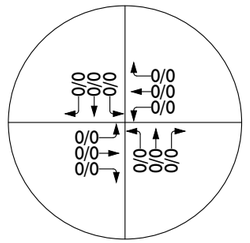
**Legend:**

10/20 = AM/PM Peak Hour Volumes
① = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

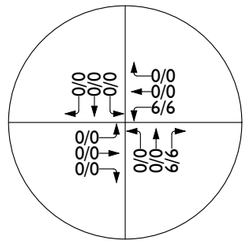
Exhibit 4-6

# Truck Project Traffic Volumes

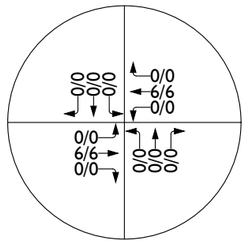


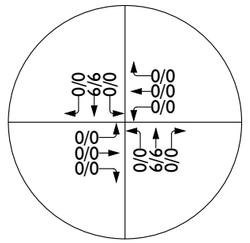

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



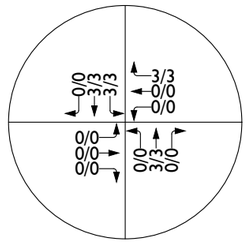

2. U.S. Route 395 (NS) at Poplar Street (EW)



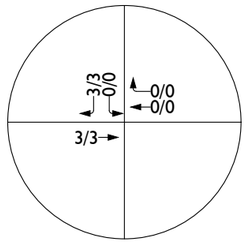

3. Three Flags Avenue (NS) at Poplar Street (EW)



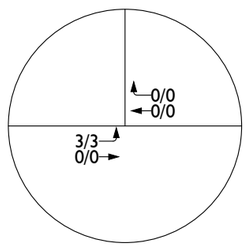

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



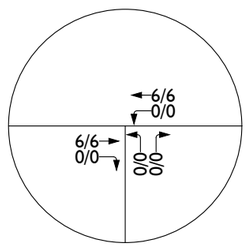

5. U.S. Route 395 (NS) at Joshua Street (EW)



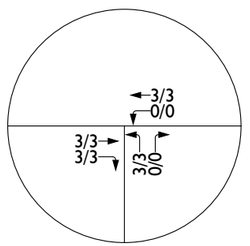

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



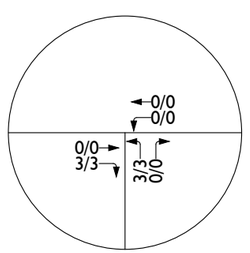

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



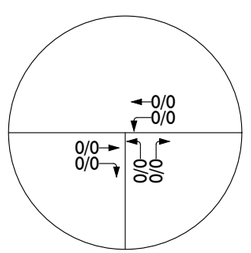

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



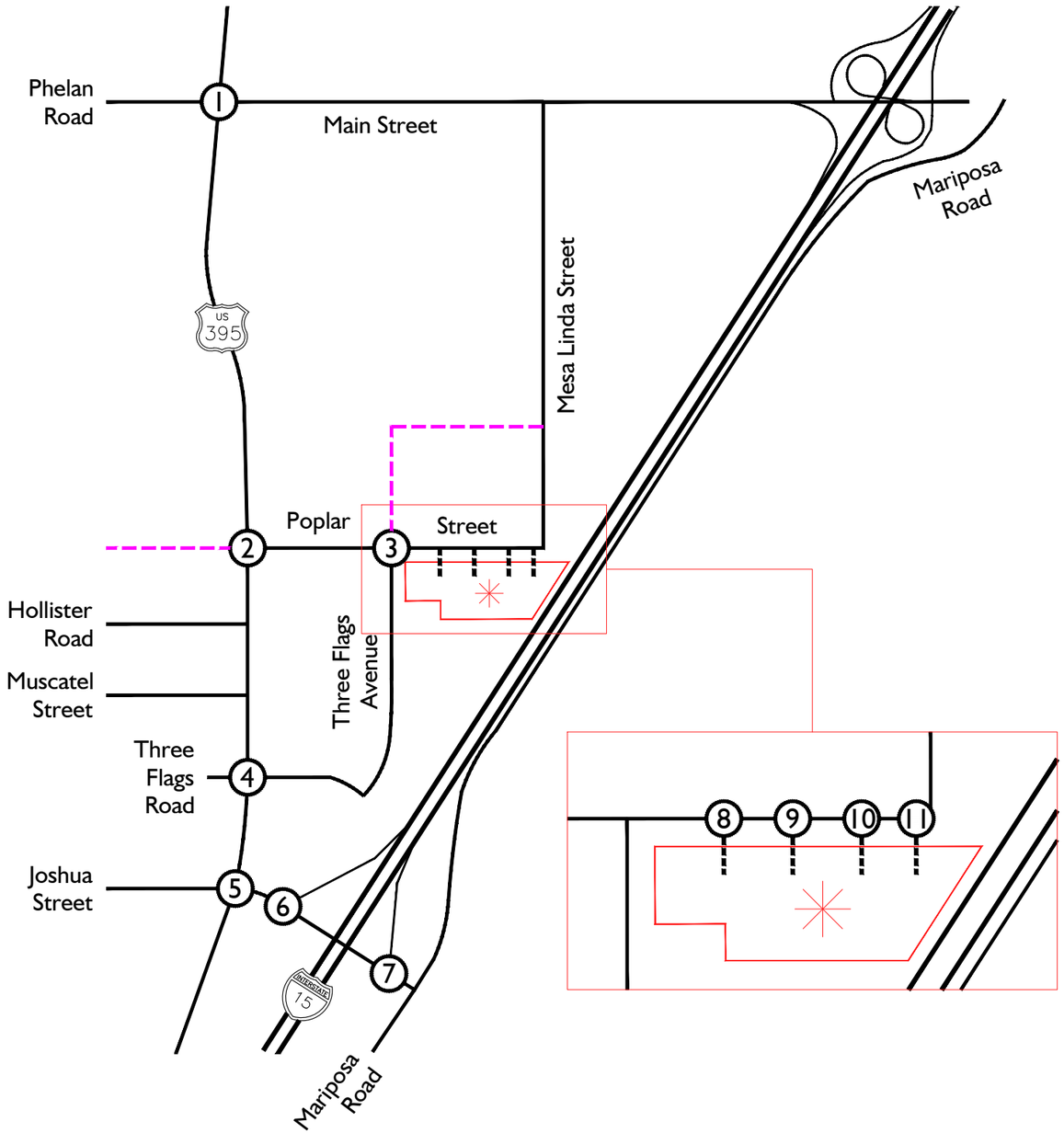

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

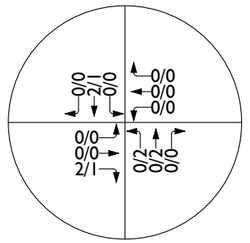
**Legend:**

10/20 = AM/PM Peak Hour Volumes
① = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

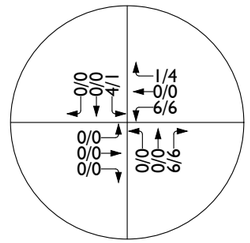
Exhibit 4-7

# Total Project Traffic Volumes (Passenger Cars + Trucks)

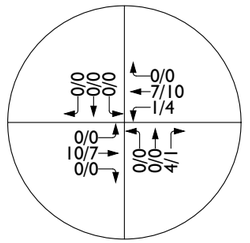


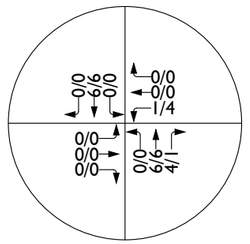

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



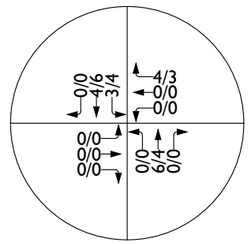

2. U.S. Route 395 (NS) at Poplar Street (EW)



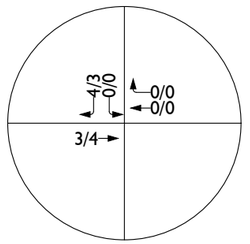

3. Three Flags Avenue (NS) at Poplar Street (EW)



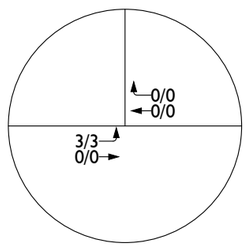

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



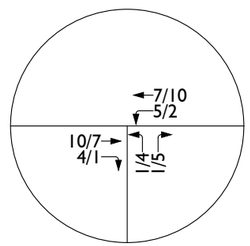

5. U.S. Route 395 (NS) at Joshua Street (EW)



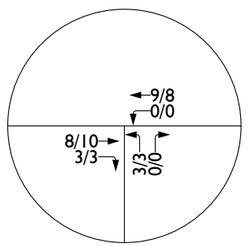

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



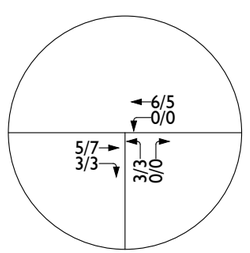

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



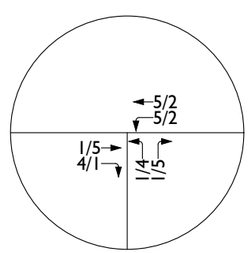

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)




11. Project Access Driveway 4 (NS) at Poplar Street (EW)

**Legend:**

10/20 = AM/PM Peak Hour Volumes
(1) = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

## Table 4-2

## Cumulative Projects Trip Generation[1,2]

| ID No. | Jurisdiction | Project Name / Case Number | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | | Weekday Daily |
|---|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total | |
| **H1** | **City of Hesperia** | CUP21-00006 | 21 | 11 | 32 | 21 | 22 | 43 | 430 |
| **H2** | **City of Hesperia** | CUP21-00003 | 44 | 44 | 88 | 48 | 48 | 96 | 1,678 |
| **H3** | **City of Hesperia** | CUP21-00001 | 19 | 10 | 29 | 19 | 21 | 40 | 398 |
| **H4** | **City of Hesperia** | CUP20-00007 | 19 | 10 | 29 | 19 | 21 | 40 | 397 |
| **H5** | **City of Hesperia** | CUP20-00006 | 145 | 43 | 188 | 24 | 62 | 86 | 1,199 |
| **H6** | **City of Hesperia** | CUP19-00010 | 1,357 | 230 | 1,587 | 274 | 1,296 | 1,570 | 15,152 |
| **H7** | **City of Hesperia** | CUP19-00006 | 68 | 71 | 140 | 82 | 72 | 154 | 2,240 |
| **H8** | **City of Hesperia** | CUP18-00003 | 96 | 84 | 180 | 101 | 100 | 201 | 2,529 |
| **H9** | **City of Hesperia** | Industrial Park | 963 | 226 | 1,189 | 262 | 927 | 1,189 | 11,783 |
| **H10** | **City of Hesperia** | Poplar 18 Project | 151 | 26 | 177 | 32 | 141 | 173 | 1,632 |
| **H11** | **City of Hesperia** | Buddhist-Town at Holy Heavenly Lake | 46 | 15 | 61 | 15 | 46 | 61 | 404 |
| **H12** | **City of Hesperia** | Tapestry Specific Plan | 599 | 1,339 | 1,938 | 1,144 | 694 | 1,838 | 19,359 |
| **H13** | **City of Hesperia** | Hesperia Industrial Center (CUP22-00003) | 100 | 34 | 134 | 51 | 81 | 132 | 1,718 |
| **H14** | **City of Hesperia** | CUP22-00004 | 132 | 39 | 171 | 22 | 56 | 78 | 1,199 |
| **H15** | **City of Hesperia** | CUP22-00006 | 3 | 2 | 5 | 3 | 4 | 7 | 18 |
| **H16** | **City of Hesperia** | Kaiser Permanente Hesperia | 84 | 87 | 171 | 115 | 102 | 216 | 1,980 |
| **H17** | **City of Hesperia** | I-15 Industrial Park Project | 681 | 118 | 799 | 143 | 631 | 774 | 7,280 |
| ***Total Cumulative Projects Trip Generation*** | | | ***4,528*** | ***2,388*** | ***6,917*** | ***2,373*** | ***4,324*** | ***6,698*** | ***69,395*** |

[1] Cumulative Projects H1 - H16 were originally identified and studied as cumulative projects as shown in Table 17 of the *I-15 Industrial Park Project Traffic Impact Analysis* , dated October 2022, prepared by Dudek

[2] I-15 Industrial Park Project trip generation sourced from Table 5 of the *I-15 Industrial Park Project Traffic Impact Analysis* , dated October 2022, prepared by Dudek

Therefore, the cumulative analyses set forth below are conservative and could result in greater impacts than anticipated. Additionally, the analysis utilizes an ambient growth rate of two percent (2%) per year, which would already capture and account for most projects in the area. The growth rate methodology is considered conservative since it is applied to all movements in all the study intersections.

## 4.3 Planned Roadway Improvements

As documented in Section 5.1.1 of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek, several roadway improvements are planned as part of the I-15 Industrial Park development. However, to conservatively assess the level of service impacts associated with the proposed project, only roadway improvements that facilitate vehicular flow stemming from the I-15 Industrial Park project were considered (i.e., new legs to intersections). Consequently, roadway improvements aimed at improving intersection level of service (e.g., capacity improvements, traffic control devices, etc.) were not assumed. Additionally, the future year traffic analysis incorporates provisions for future traffic corridors to accommodate the flow of vehicles originating from adjacent cumulative projects. As a result, the following roadway improvements have been reviewed and incorporated in all future scenarios, (i.e., Project Opening Year (2026) Conditions and Horizon Year (2040) Conditions) as shown in **Table 4-3**:

**Table 4-3**

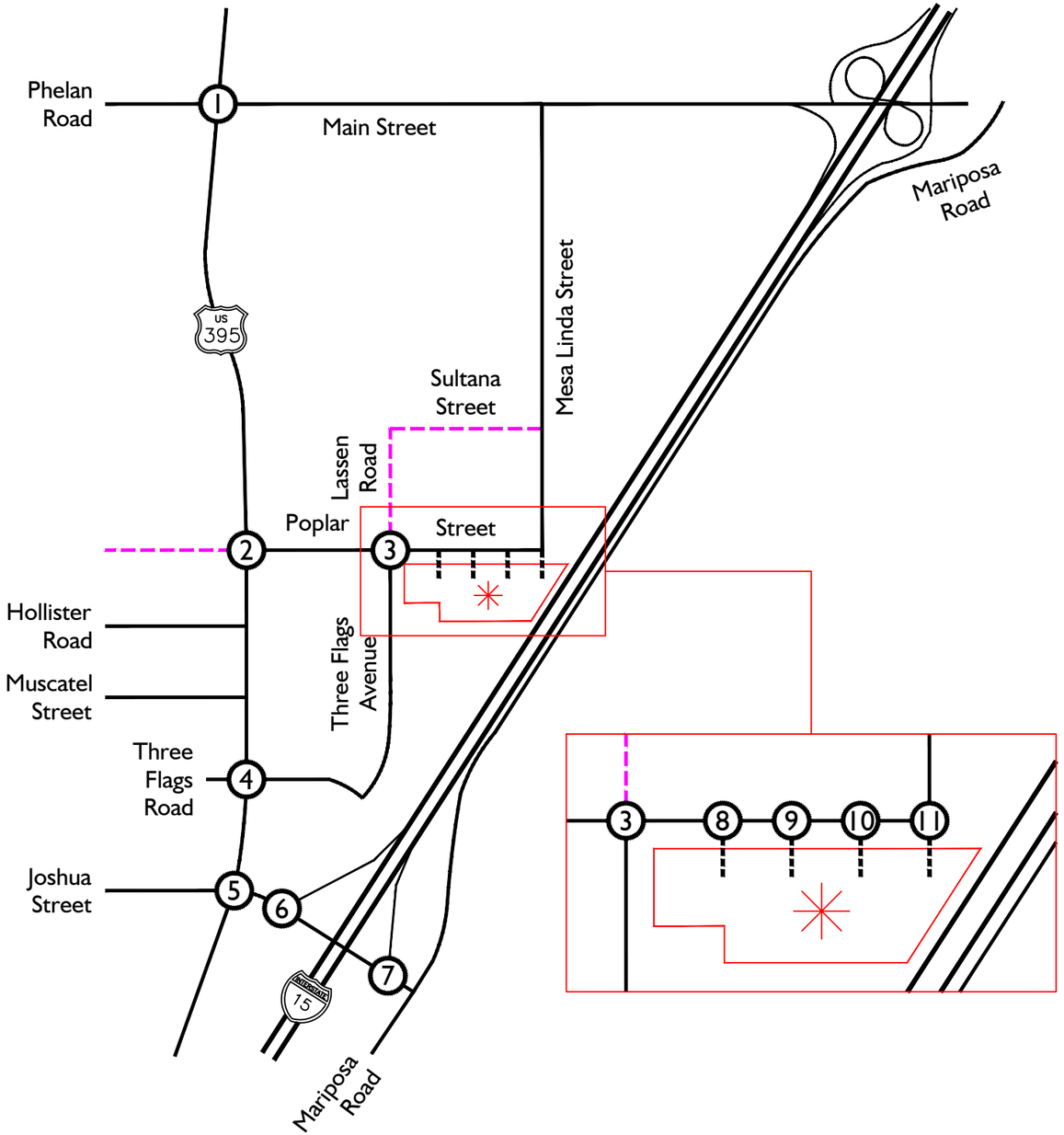
**Planned Roadway Improvements**

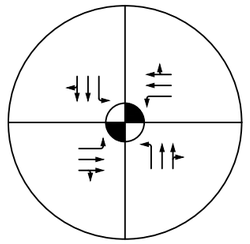
| Study Intersection / Roadway | Planned Improvement |
|---|---|
| Study Intersection #2<br>U.S. Route 395 (NS) at Poplar Street (EW)<br>(Dudek Intersection #13) | The west leg of U.S. Route 395 at Poplar Street will be built to consist of one left-turn pocket and one shared through/right-turn lane. |
| Study Intersection #3<br>Three Flags Avenue (NS) at Poplar Street (EW)<br>(Dudek Intersection #16) | Lassen Road is to be built to a half width, with the ultimate ROW and Curb-to-Curb buildout pending development east of the roadway. Vehicles would be able to travel northbound and southbound along Lassen Road. |
| Poplar Street | Poplar Street is to be built to a 100-foot ROW, with a 72-foot Curb-to-Curb width. It must be noted that these widths proposed with the development of the Project appear to match the arterial classification. |

The planned and project-specific intersection and roadway improvements are shown in **Exhibit 4-9**: Future Year Traffic Controls & Intersection Geometrics.

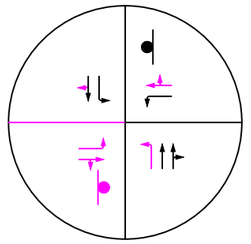
Exhibit 4-9

# Planned and Project-Specific Improvements

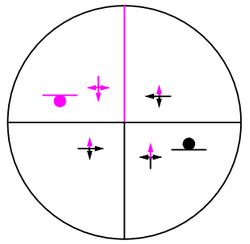


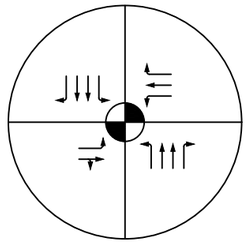
1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



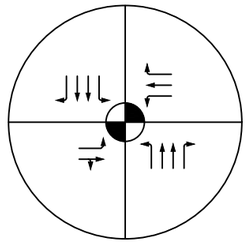
2. U.S. Route 395 (NS) at Poplar Street (EW)



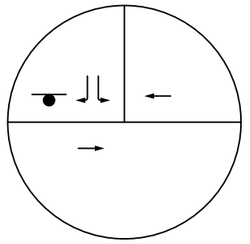
3. Three Flags Avenue (NS) at Poplar Street (EW)



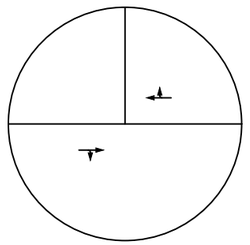
4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



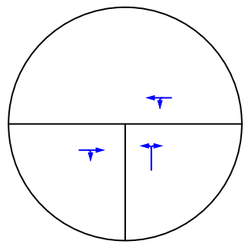
5. U.S. Route 395 (NS) at Joshua Street (EW)



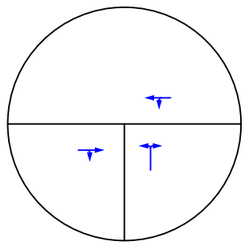
6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



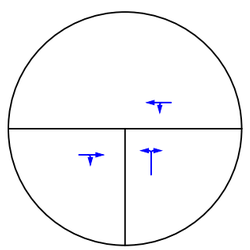
7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



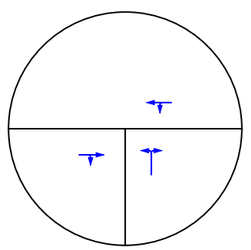
8. Project Access Driveway 1 (NS) at Poplar Street (EW)



9. Project Access Driveway 2 (NS) at Poplar Street (EW)



10. Project Access Driveway 3 (NS) at Poplar Street (EW)



11. Project Access Driveway 4 (NS) at Poplar Street (EW)

**Legend:**

- = Traffic Signal
- = Stop Sign
- = Planned Improvements
- = Project-Specific Improvements
- = Study Area Intersection
- = Project Site
- = Project Access Driveway
- = Project Site Boundary

N

## 4.4 Project Opening Year (2026) Without Project Conditions Traffic Volumes

Project Opening Year (2026) Without Project Conditions traffic volumes consist of two (2) years of annual growth on top of baseline existing (2024) traffic at two percent (2%) per year (i.e., 4% total growth), plus traffic generated by cumulative projects. Project Opening Year (2026) Without Project Conditions traffic volumes are depicted in **Exhibit 4-10**.

## 4.5 Project Opening Year (2026) With Project Conditions Traffic Volumes

Project Opening Year (2026) With Project Conditions traffic volumes consist of two (2) years of annual growth on top of baseline existing (2024) traffic at two percent (2%) per year (i.e., 4% total growth), plus traffic generated by cumulative projects and the proposed project.

Project Opening Year (2026) With Project Conditions traffic volumes are depicted in **Exhibit 4-11**.

## 4.6 Horizon Year (2040) Without Project Conditions Traffic Volumes

The traffic volumes representing Horizon Year (2040) Without Project Conditions are based upon the traffic volumes shown in Figure 24: Horizon Year (2040) plus Project Peak Hour Traffic Volumes (PCE) of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek.

The traffic volumes shown in Figure 24 consist of the following volume components stated within the Dudek Report:

- I-15 Industrial Park Project traffic volumes (Figure 12); and
- Horizon Year (2040) traffic volumes (Figure 23).

The following excerpt from the Dudek report describes how the Figure 23 traffic volumes were developed,

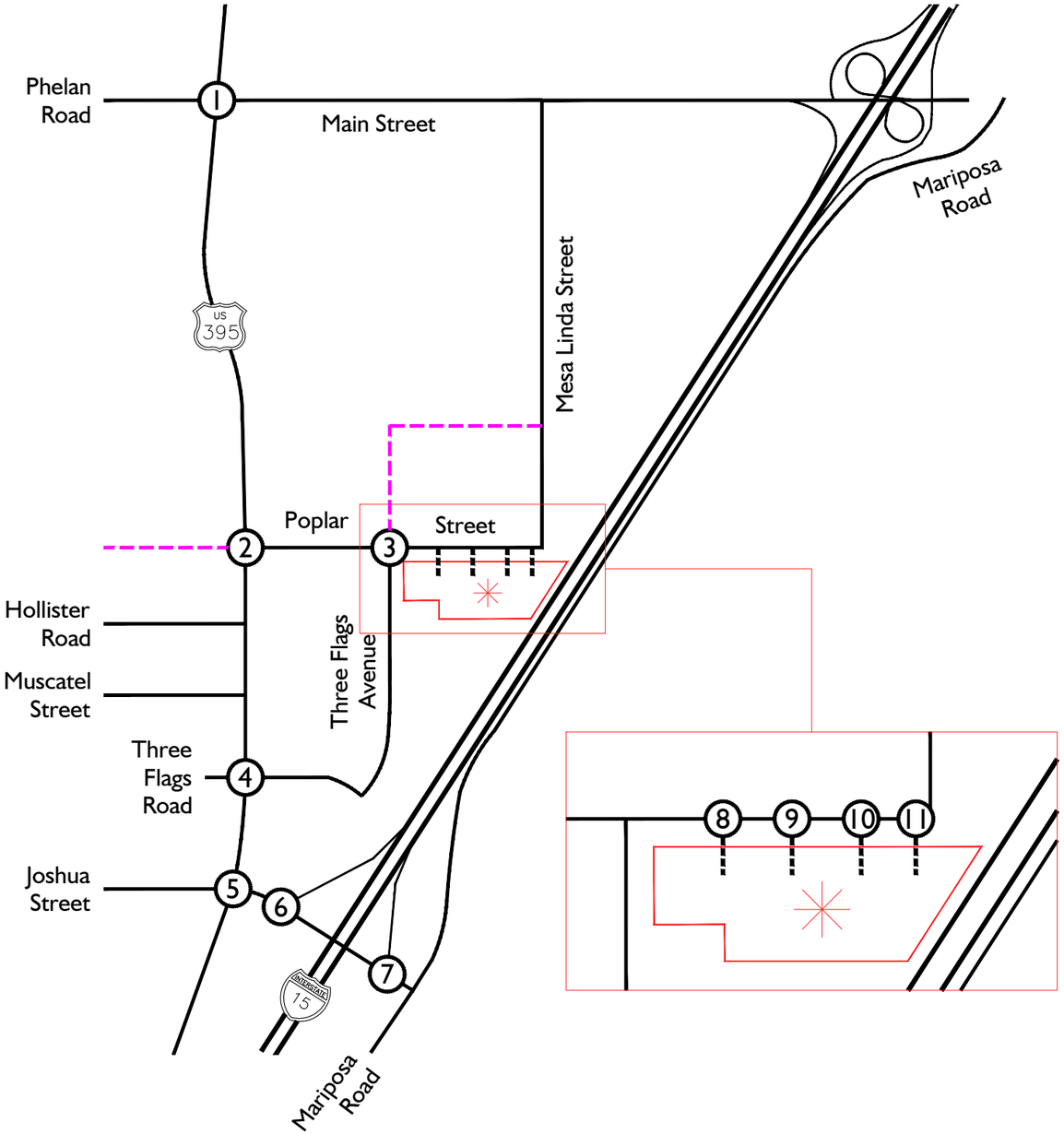
> "General Plan buildout traffic volumes were developed using the current [San Bernadino Transportation Analysis Model] SBTAM for the horizon year 2040. All model output volumes were provided by a County-approved modeler (Translutions), and post-processed and balanced for conservation of flow throughout the network."

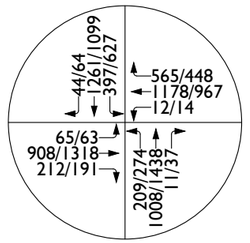
The use of traffic volumes shown in Figure 24 provides a more conservative analysis as traffic generated by the I-15 Industrial Park project is accounted for.

Horizon Year (2040) Without Conditions traffic volumes are depicted in **Exhibit 4-12**.

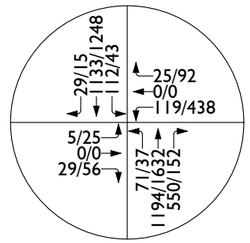
Exhibit 4-10

# Project Opening Year (2026) Without Project Conditions Traffic Volumes

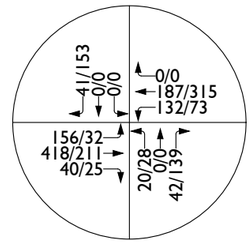


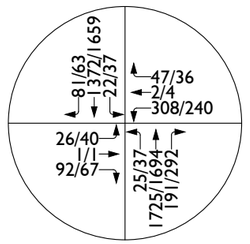

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



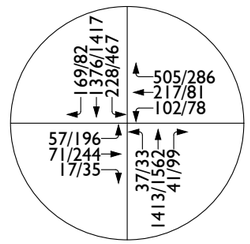

2. U.S. Route 395 (NS) at Poplar Street (EW)



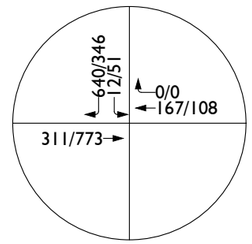

3. Three Flags Avenue (NS) at Poplar Street (EW)



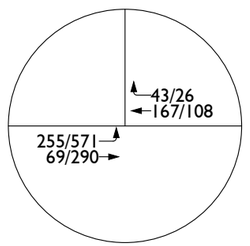

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



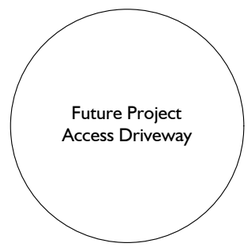

5. U.S. Route 395 (NS) at Joshua Street (EW)



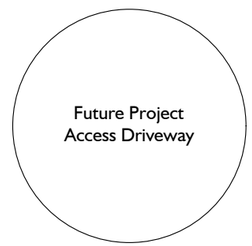

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



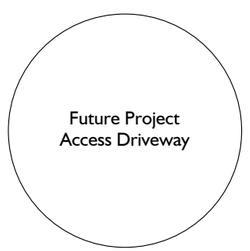

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



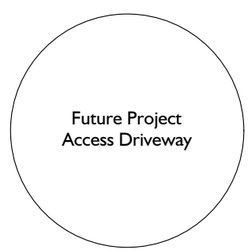

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



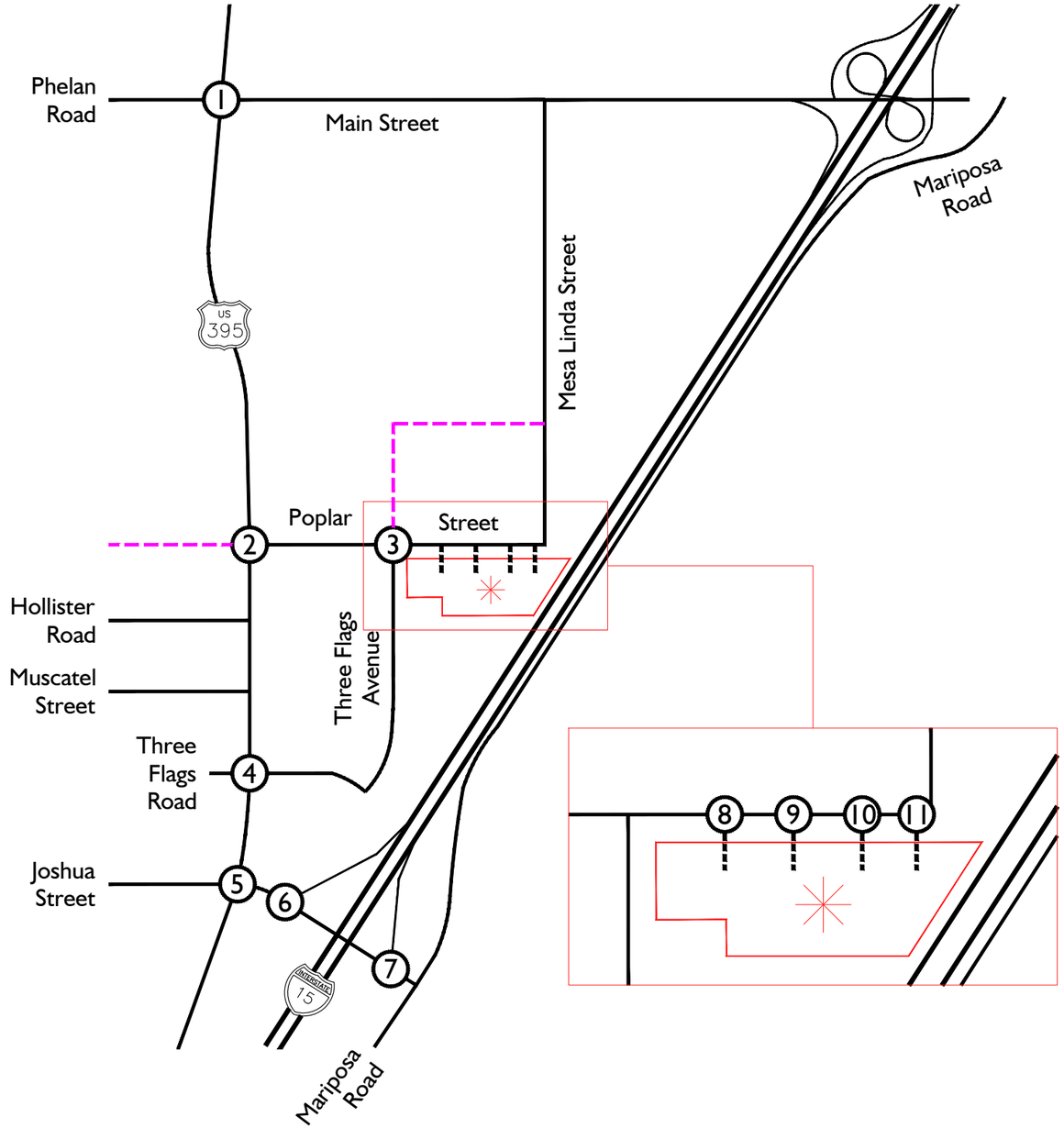

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

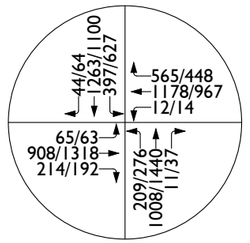
**Legend:**

10/20 = AM/PM Peak Hour Volumes
(1) = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

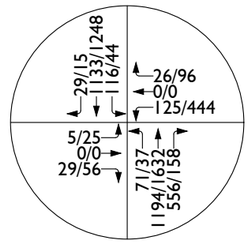
Exhibit 4-11

# Project Opening Year (2026) With Project Conditions Traffic Volumes

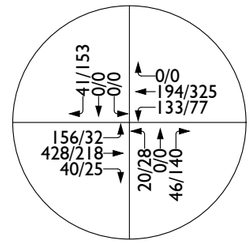


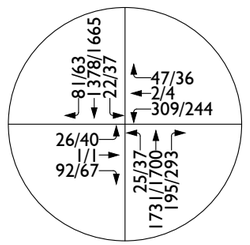

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



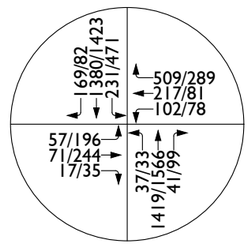

2. U.S. Route 395 (NS) at Poplar Street (EW)



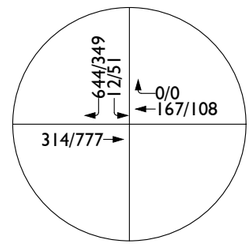

3. Three Flags Avenue (NS) at Poplar Street (EW)



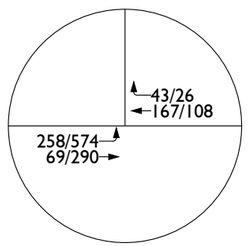

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



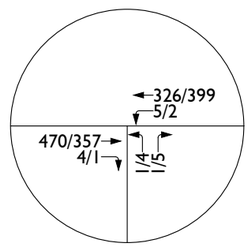

5. U.S. Route 395 (NS) at Joshua Street (EW)



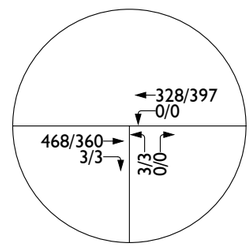

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



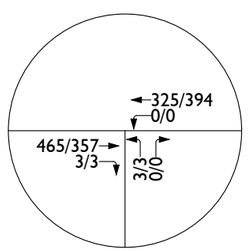

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



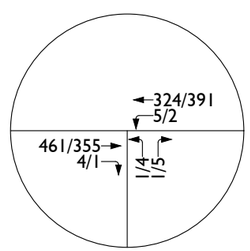

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)



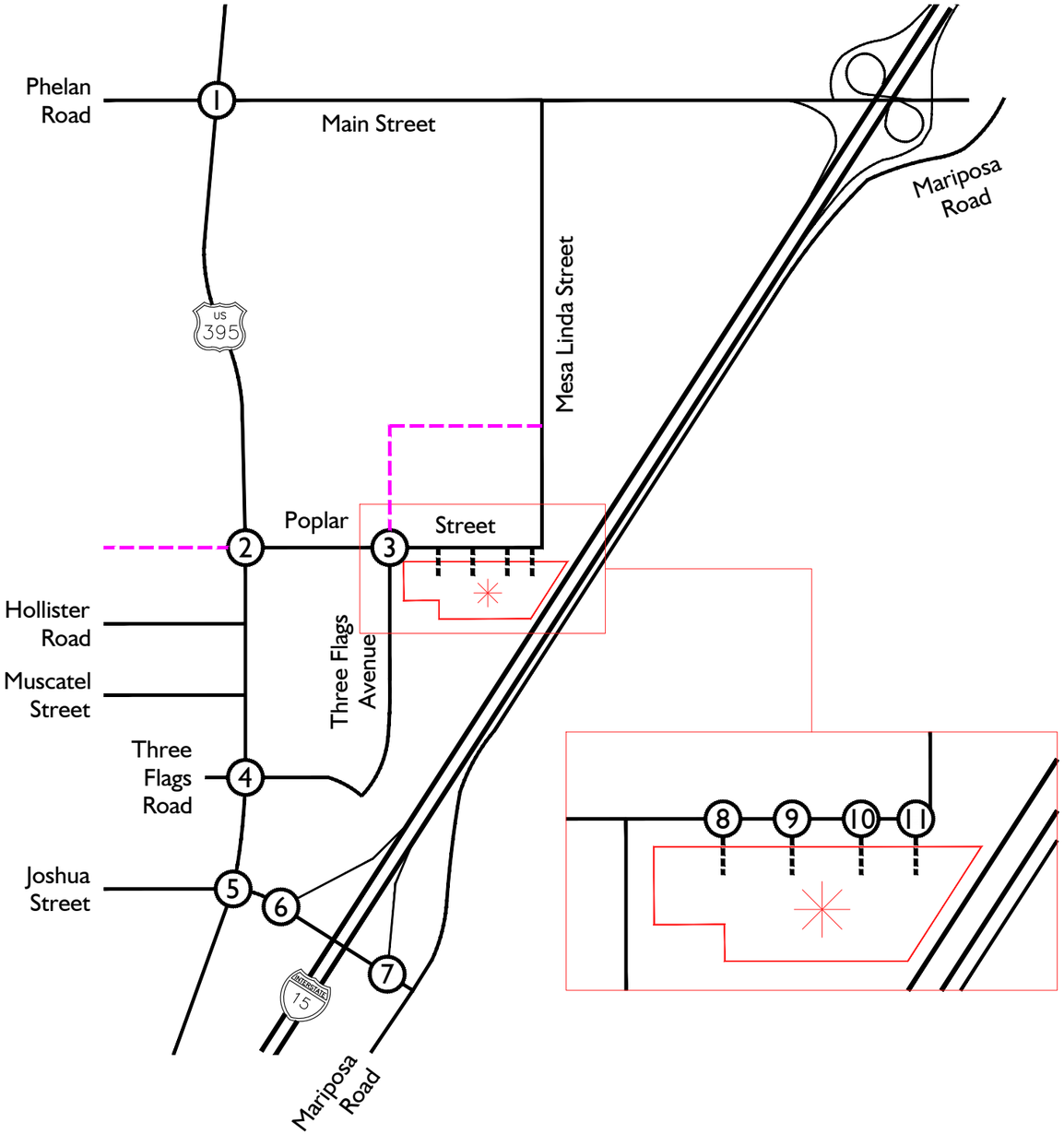

11. Project Access Driveway 4 (NS) at Poplar Street (EW)

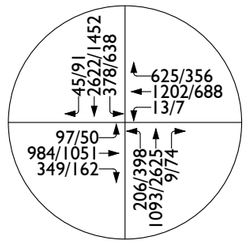
**Legend:**

10/20 = AM/PM Peak Hour Volumes
① = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

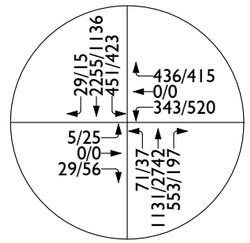
Exhibit 4-12

# Horizon Year (2040) Without Project Conditions Traffic Volumes

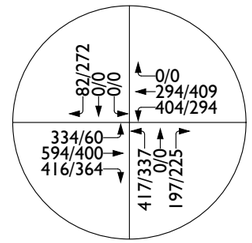


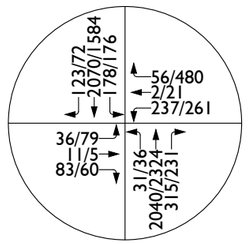

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



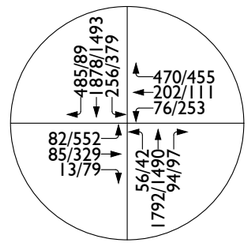

2. U.S. Route 395 (NS) at Poplar Street (EW)



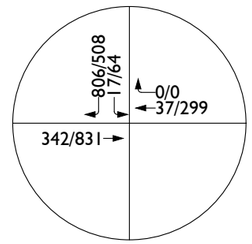

3. Three Flags Avenue (NS) at Poplar Street (EW)



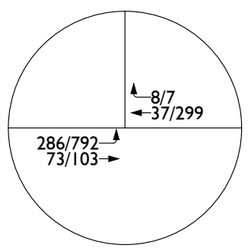

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



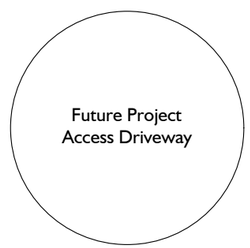

5. U.S. Route 395 (NS) at Joshua Street (EW)



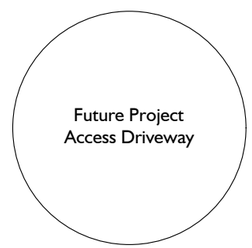

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



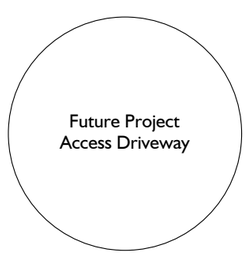

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



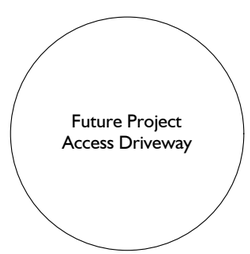

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)




11. Project Access Driveway 4 (NS) at Poplar Street (EW)

**Legend:**

10/20 = AM/PM Peak Hour Volumes
① = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

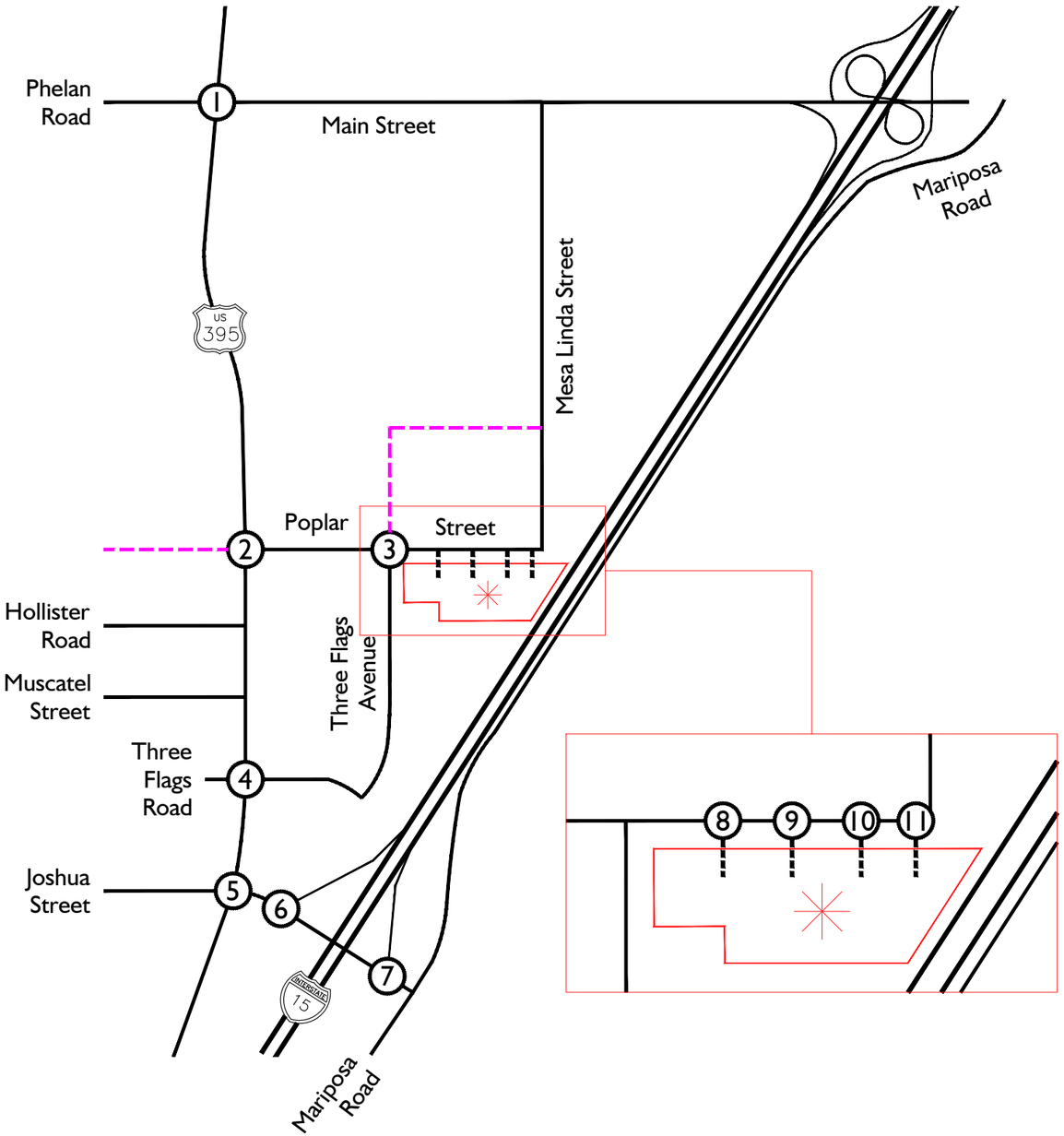
## 4.7 Horizon Year (2040) With Project Conditions Traffic Volumes

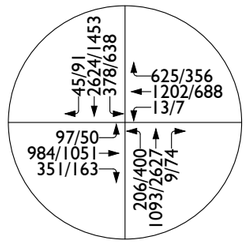
Horizon Year (2040) With Project Conditions traffic volumes consist of Horizon Year (2040) Without Project Conditions traffic volumes plus traffic generated by the proposed project.

Horizon Year (2040) With Project Conditions traffic volumes are shown in **Exhibit 4-13**.

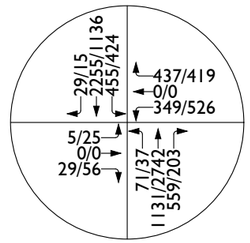
Exhibit 4-13

# Horizon Year (2040) With Project Conditions Traffic Volumes

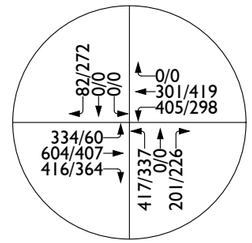


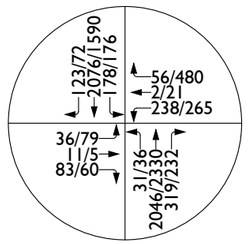

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)



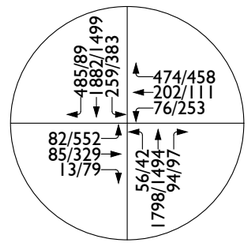

2. U.S. Route 395 (NS) at Poplar Street (EW)



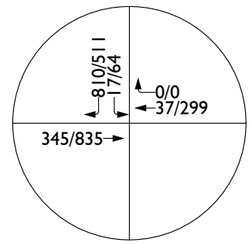

3. Three Flags Avenue (NS) at Poplar Street (EW)



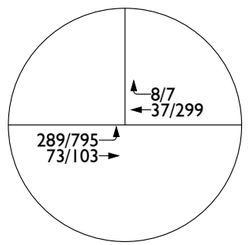

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)



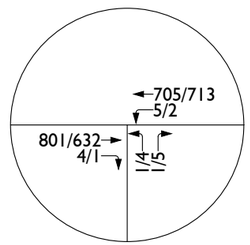

5. U.S. Route 395 (NS) at Joshua Street (EW)



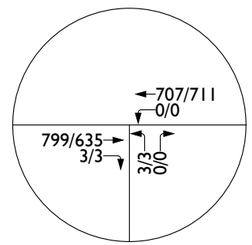

6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)



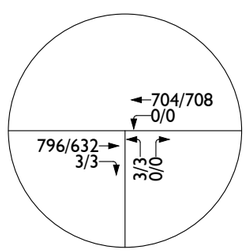

7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)



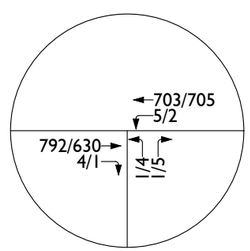

8. Project Access Driveway 1 (NS) at Poplar Street (EW)




9. Project Access Driveway 2 (NS) at Poplar Street (EW)




10. Project Access Driveway 3 (NS) at Poplar Street (EW)




11. Project Access Driveway 4 (NS) at Poplar Street (EW)

**Legend:**

10/20 = AM/PM Peak Hour Volumes
(1) = Study Area Intersection
= Future Roadway
= Project Site
= Project Access Driveway
= Project Site Boundary

# 5.0 CA MUTCD Warrant Analysis

The following study intersection has been evaluated for signalization based on the peak hour signal warrants and procedures contained in the California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition, Revision 9 (April 1, 2025):

Int #2. U.S. Route 395 at Poplar Street

Int #3. Three Flags Avenue at Poplar Street

The purpose of this traffic signal warrant analysis is to determine whether the unsignalized study intersections meet the minimum peak hour traffic volumes requirements to warrant the recommendation of a traffic signal installation.

**Table 5-1** summarizes the results of the CA MUTCD peak hour traffic signal warrant analysis at the study intersections listed above for all analysis scenarios evaluated as part of this study.

As shown in Table 5-1, the peak hour traffic signal warrants are satisfied for both unsignalized study intersections under the following analysis scenarios and time periods:

Int #2. U.S. Route 395 at Poplar Street

- Project Opening Year (2026) Without Project Conditions (AM & PM Peak Hours)
- Project Opening Year (2026) With Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) Without Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) With Project Conditions (AM & PM Peak Hours)

Int #3. Three Flags Avenue at Poplar Street

- Horizon Year (2040) Without Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) With Project Conditions (AM & PM Peak Hours)

Detailed CA MUTCD traffic signal warrant analysis worksheets are included in **Appendix B**.

## Table 5-1
## CA MUTCD Peak Hour Signal Warrant Analysis Summary

| Study Intersection | | Peak Hour Signal Warrant Met? | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing Conditions | | Project Opening Year (2026) Without Project Conditions | | Project Opening Year (2026) With Project Conditions | | Horizon Year (2040) Without Project Conditions | | Horizon Year (2040) With Project Conditions | |
| | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 2. | U.S. Route 395 (NS) at Poplar Street (EW) | NO | NO | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** | **YES** |
| 3. | Three Flags Avenue (NS) at Poplar Street (EW) | NO | NO | NO | NO | NO | NO | **YES** | **YES** | **YES** | **YES** |

# 6.0 Study Intersection Peak Hour LOS Analysis

This section of the report provides a discussion on the study intersection peak hour LOS analysis and findings.

The minimum acceptable LOS thresholds for each study intersection are detailed in Section 2.2.3 of this report. Furthermore, operational improvements shall be identified for the study area intersections in which the LOS performance criteria also discussed in Section 2.2.3 of this report are met.

## 6.1 Existing Conditions Level of Service

Existing Conditions LOS calculations for the existing seven (7) study intersections are reported in **Table 6-1** and are based on the weekday AM and PM peak hour existing traffic volumes shown in Exhibit 3-2 and the existing traffic controls & intersection geometrics shown in Exhibit 3-1.

As shown in Table 6-1, all existing study intersections are currently operating at an acceptable LOS during the peak hours under Existing Conditions.

Detailed LOS analysis worksheets for Existing Conditions are included in **Appendix C**.

## 6.2 Project Opening Year (2026) Without Project Conditions Level of Service

Project Opening Year (2026) Without Project Conditions LOS calculations for the existing seven (7) study intersections are reported in **Table 6-2** and are based on the Project Opening Year (2026) Without Project Conditions traffic volumes shown in Exhibit 4-10 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As shown in Table 6-2, all existing study intersections are forecast to operate at an acceptable LOS during the peak hours under Project Opening Year (2026) Without Project Conditions with the exception of the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- AM Peak Hour – LOS F (169.4 seconds per vehicle)
- PM Peak Hour – LOS F (253.6 seconds per vehicle)

## Table 6-1
## Study Intersection LOS Analysis Summary
## Existing Conditions

| | Study Intersection | Traffic Control[1,2] | Methodology | Acceptable LOS[3] | Delay (sec/veh)[4,5] | | Level of Service | |
|---|---|---|---|---|---|---|---|---|
| | | | | | AM | PM | AM | PM |
| 1. | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | TS | HCM | E | 42.0 | 65.7 | D | E |
| 2. | U.S. Route 395 (NS) at Poplar Street (EW) | CSS | HCM | E | 16.2 | 25.0 | C | C |
| 3. | Three Flags Avenue (NS) at Poplar Street (EW) | CSS | HCM | D | 9.4 | 9.2 | A | A |
| 4. | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | TS | HCM | E | 13.2 | 12.0 | B | B |
| 5. | U.S. Route 395 (NS) at Joshua Street (EW) | TS | HCM | E | 13.2 | 15.0 | B | B |
| 6. | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | 9.4 | 9.4 | A | A |
| 7. | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | 5.9 | 4.2 | A | A |

[1] TS = Traffic Signal;
CSS = Cross-Street Stop.

[2] For cross-street stop controlled intersections, level of service is based on on the worst stop-controlled approach from the minor street or an individual movement from the major street,

[3] In compliance with Implementation Policy CI-2.2 of the City of Hesperia General Plan, LOS E is the minimum acceptable level of service standard for intersections along major corridors.

[4] Deficient operation shown in **Bold**.

[5] HCM Analysis Software: PTV Vistro, Version 2024.

**Table 6-2**
**Study Intersection LOS Analysis Summary**
**Project Opening Year (2026) Conditions**

| | Study Intersection | Traffic Control[1,2] | Methodology | Acceptable LOS[3] | Without Project | | | | With Project | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Delay (sec/veh)[3,4] | | Level of Service | | Delay (sec/veh)[3,4,5] | | Increase in Delay (sec) | | Level of Service | | Requires LOS Improvement? | |
| | | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 1. | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | TS | HCM | E | **169.4** | **253.6** | **F** | **F** | **169.5** | **254.1** | **0.1** | **0.5** | **F** | **F** | **YES** | **YES** |
| | *With Improvements* | *TS* | *HCM* | *E* | - - | - - | - - | - - | *40.7* | *48.0* | **- -** | **- -** | *D* | *D* | - - | - - |
| 2. | U.S. Route 395 (NS) at Poplar Street (EW) | CSS | HCM | E | **#[6]** | **#[6]** | **F** | **F** | **#[6]** | **#[6]** | **- -** | **- -** | **F** | **F** | **YES** | **YES** |
| | *With Improvements* | *TS* | *HCM* | *E* | - - | - - | - - | - - | *35.2* | *49.1* | - - | - - | *D* | *D* | - - | - - |
| 3. | Three Flags Avenue (NS) at Poplar Street (EW) | CSS | HCM | D | **80.9** | 15.6 | **F** | C | **88.1** | 16.1 | **7.2** | 0.5 | **F** | C | **YES** | NO |
| | *With Improvements* | *AWS* | *HCM* | *D* | - - | - - | - - | - - | *28.4* | *16.1* | - - | - - | *D* | *C* | - - | - - |
| 4. | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | TS | HCM | E | 23.8 | 18.2 | C | B | 24.1 | 18.5 | 0.3 | 0.3 | C | B | NO | NO |
| 5. | U.S. Route 395 (NS) at Joshua Street (EW) | TS | HCM | E | 53.1 | 53.7 | D | D | 54.2 | 54.9 | 1.1 | 1.2 | D | D | **YES** | **YES** |
| 6. | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | **55.5** | 13.2 | **F** | B | **57.0** | 13.2 | **1.5** | 0.0 | **F** | B | **YES** | NO |
| | *With Improvements* | *CSS* | *HCM* | *E* | - - | - - | - - | - - | *13.3* | *22.7* | - - | - - | *B* | *C* | - - | - - |
| 7. | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | 6.6 | 5.6 | A | A | 6.6 | 5.7 | 0.0 | 0.1 | A | A | NO | NO |

[1] TS = Traffic Signal;
CSS = Cross-Street Stop.

[2] For cross-street stop controlled intersections, level of service is based on on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

[3] In compliance with Implementation Policy CI-2.2 of the City of Hesperia General Plan, LOS E is the minimum acceptable level of service standard for intersections along major corridors.

[4] Deficient operation shown in **Bold**.

[5] HCM Analysis Software: PTV Vistro, Version 2024.

[6] A value of # indicates that the calculated control delay for the intersection exceeds 1,000 seconds.

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (80.9 seconds per vehicle)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

- AM Peak Hour – LOS F (55.5 seconds per vehicle)

Detailed LOS analysis worksheets for Project Opening Year (2026) Without Project Conditions are included in **Appendix D**.

## 6.3 Project Opening Year (2026) With Project Conditions Level of Service

Project Opening Year (2026) With Project Conditions LOS calculations for the existing seven (7) study intersections are also reported in Table 6-2 and are based on the Project Opening Year (2026) With Project Conditions traffic volumes shown in Exhibit 4-11 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As also shown in Table 6-2, all study intersections are forecast to operate at an acceptable LOS during the peak hours under Project Opening Year (2026) With Project Conditions with the exception of the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- AM Peak Hour – LOS F (169.5 seconds per vehicle)
- PM Peak Hour – LOS F (254.1 seconds per vehicle)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (88.1 seconds per vehicle)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

- AM Peak Hour – LOS F (57.0 seconds per vehicle)

Detailed LOS analysis worksheets for Project Opening Year (2026) With Project Conditions are included in **Appendix E**.

## 6.4 Horizon Year (2040) Without Project Conditions Level of Service

Horizon Year (2040) Without Project Conditions LOS calculations for the existing seven (7) study intersections are reported in **Table 6-3** and are based on the Horizon Year (2040) Without Project Conditions traffic volumes shown in Exhibit 4-12 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As shown in Table 6-3, all study intersections are forecast to operate at an acceptable LOS during the peak hours under Horizon Year (2040) Without Project Conditions with the exception of the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- AM Peak Hour – LOS F (293.4 seconds per vehicle)
- PM Peak Hour – LOS F (324.4 seconds per vehicle)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- PM Peak Hour – LOS F (86.2 seconds per vehicle)

Detailed LOS analysis worksheets for Horizon Year (2040) Without Project Conditions are included in **Appendix F**.

**Table 6-3**
**Study Intersection LOS Analysis Summary**
**Horizon Year (2040) Conditions**

| | Study Intersection | Traffic Control[1,2] | Methodology | Acceptable LOS[3] | Without Project | | | | With Project | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Delay (sec/veh)[3,4] | | Level of Service | | Delay (sec/veh)[3,4,5] | | Increase in Delay (sec) | | Level of Service | | Requires LOS Improvement? | |
| | | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 1. | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | TS | HCM | E | **293.4** | **324.4** | **F** | **F** | **293.7** | **324.9** | **0.3** | **0.5** | **F** | **F** | **YES** | **YES** |
| | *With Improvements* | *TS* | *HCM* | *E* | - - | - - | - - | - - | *46.0* | *57.2* | - - | - - | *D* | *E* | - - | - - |
| 2. | U.S. Route 395 (NS) at Poplar Street (EW) | CSS | HCM | E | **#[6]** | **#[6]** | **F** | **F** | **#[6]** | **#[6]** | **- -** | **- -** | **F** | **F** | **YES** | **YES** |
| | *With Improvements* | *TS* | *HCM* | *E* | - - | - - | - - | - - | *40.2* | *40.1* | - - | - - | *D* | *D* | - - | - - |
| 3. | Three Flags Avenue (NS) at Poplar Street (EW) | CSS | HCM | D | **#[6]** | **#[6]** | **F** | **F** | **#[6]** | **#[6]** | **- -** | **- -** | **F** | **F** | **YES** | **YES** |
| | *With Improvements* | *TS* | *HCM* | *D* | - - | - - | - - | - - | *29.9* | *24.2* | - - | - - | *C* | *C* | - - | - - |
| 4. | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | TS | HCM | E | 34.6 | 78.1 | C | E | 35.4 | 78.8 | 0.8 | 0.7 | D | E | NO | NO |
| 5. | U.S. Route 395 (NS) at Joshua Street (EW) | TS | HCM | E | 55.9 | **86.2** | E | **F** | 57.6 | **86.7** | 1.7 | **0.5** | E | **F** | NO | **YES** |
| | *With Improvements* | *TS* | *HCM* | *E* | - - | - - | - - | - - | *56.6* | *78.0* | - - | - - | *E* | *E* | - - | - - |
| 6. | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | 21.9 | 23.4 | C | C | 22.3 | 23.7 | 0.4 | 0.3 | C | C | YES | YES |
| | *With Improvements*[7] | *CSS* | *HCM* | *E* | - - | - - | - - | - - | *11.1* | *30.6* | - - | - - | *B* | *D* | - - | - - |
| 7. | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | CSS | HCM | E | 6.1 | 11.1 | A | B | 6.2 | 11.2 | 0.1 | 0.1 | A | B | NO | NO |

[1] TS = Traffic Signal;
CSS = Cross-Street Stop.

[2] For cross-street stop controlled intersections, level of service is based on on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

[3] In compliance with Implementation Policy CI-2.2 of the City of Hesperia General Plan, LOS E is the minimum acceptable level of service standard for intersections along major corridors.

[4] Deficient operation shown in Bold.

[5] HCM Analysis Software: PTV Vistro, Version 2024.

[6] A value of # indicates that the calculated control delay for the intersection exceeds 1,000 seconds.

[7] Although the study intersection's LOS is acceptable under Horizon Year (2040) conditions, intersection improvements were required for the previous Project Opening Year (2026) conditions. Therefore, the recommended improvements for Project Opening Year (2026) conditions are analyzed under Horizon Year (2040) conditions.

## 6.5 Horizon Year (2040) With Project Conditions Level of Service

Horizon Year (2040) With Project Conditions LOS calculations for the existing seven (7) study intersections are also reported in Table 6-3 and are based on the Horizon Year (2040) With Project Conditions traffic volumes shown in Exhibit 4-13 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As also shown in Table 6-3, all study intersections are forecast to operate at an acceptable LOS during the peak hours under Horizon Year (2040) With Project Conditions with the exception of the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- AM Peak Hour – LOS F (293.7 seconds per vehicle)
- PM Peak Hour – LOS F (324.9 seconds per vehicle)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

- AM Peak Hour – LOS F (1,000+ seconds per vehicle)
- PM Peak Hour – LOS F (1,000+ seconds per vehicle)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- PM Peak Hour – LOS F (86.7 seconds per vehicle)

Detailed LOS analysis worksheets for Horizon Year (2040) With Project Conditions are included in **Appendix G**.

## 6.6 Intersection Analysis Findings

The following study intersections have been identified to require operational improvements to restore traffic operations to acceptable levels of service and reduce the project's impact to less than significant levels under Project Opening Year (2026) and/or Horizon Year (2040) conditions.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

The recommended operational improvements for the deficient study intersections are discussed in detail in Section 8.0 of this report.

# 7.0 Intersection Queuing Analysis

This section of the report provides a comprehensive queuing analysis conducted for the study area for each analysis scenario. The objective of this analysis is to assess the possibility of any traffic overflow from turn pockets into through lanes or adjacent intersections.

The queue analysis has been performed utilizing the HCM 7 95th percentile queue evaluation methodology. Queue lengths have been reported for the following turning movements per respective study intersection.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Northbound Left-Turn
- Southbound Left-Turn

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Southbound Left-Turn
- Westbound Left-Turn
- Westbound Shared Through/Right-Turn
- *Westbound Shared Left/Through/Right-Turn ("With Improvement" Scenarios*)*
- *Westbound Right-Turn ("With Improvement Scenarios*)*

Int #4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)

- Northbound Left-Turn
- Northbound Right-Turn
- Southbound Left-Turn
- Southbound Right-Turn

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Northbound Left-Turn
- Northbound Right-Turn

- Southbound Left-Turn
- Westbound Left-Turn
- Westbound Through
- Westbound Right-Turn

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

- Southbound Left-Turn
- Southbound Right-Turn

Int #7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)

- Eastbound Shared Left-Turn/Through

## 7.1 Existing Conditions Queuing Analysis

The queuing analysis results for the analyzed turning movements under Existing Conditions are summarized in **Table 7-1**.

As shown in Table 7-1, the 95th percentile queues are satisfied for all turning movements.

## 7.2 Project Opening Year (2026) Without Project Conditions Queuing Analysis

The queuing analysis results for the analyzed turning movements under Project Opening Year (2026) Without Project Conditions are summarized in **Table 7-2**.

As shown in Table 7-2, the 95th percentile queues are satisfied for all turning movements with the exception to the following:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Southbound Left-Turn (AM & PM Peak Hour)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Westbound Left-Turn (PM Peak Hour)

## Table 7-1

## Study Intersection HCM 95th Percentile Vehicular Queue Analysis Summary[1]

## Existing Conditions

| Intersection | | Movement | Storage Length (Feet)[2] | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | |
|---|---|---|---|---|---|---|---|
| | | | | AM | PM | AM | PM |
| 1 | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | Northbound Left-Turn | 280 | 140 | 259 | YES | YES |
| | | Southbound Left-Turn | 240 | 255 | 333 | YES[4] | YES[4] |
| 2 | U.S. Route 395 (NS) at Poplar Street (EW) | Southbound Left-Turn | 375 | 25[3] | 25[3] | YES | YES |
| | | Westbound Left-Turn | 540 | 25[3] | 25[3] | YES | YES |
| | | Westbound Right-Turn | 540 | 25[3] | 25[3] | YES | YES |
| 4 | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | Northbound Left-Turn | 190 | 25[3] | 32 | YES | YES |
| | | Northbound Right-Turn | 190 | 27 | 34 | YES | YES |
| | | Southbound Left-Turn | 225 | 25[3] | 32 | YES | YES |
| | | Southbound Right-Turn | 225 | 25[3] | 25[3] | YES | YES |
| 5 | U.S. Route 395 (NS) at Joshua Street (EW) | Northbound Left-Turn | 190 | 25[3] | 29 | YES | YES |
| | | Northbound Right-Turn | 330 | 25[3] | 34 | YES | YES |
| | | Southbound Left-Turn | 220 | 137 | 138 | YES | YES |
| | | Westbound Left-Turn | 100 | 132 | 89 | YES[4] | YES |
| | | Westbound Through | 100 | 28 | 25[3] | YES | YES |
| | | Westbound Right-Turn | 100 | 124 | 150 | YES[4] | YES[4] |
| 6 | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | Southbound Left-Turn | 25 | 25[3] | 25[3] | YES | YES |
| | | Southbound Right-Turn | 1,500 | 25[3] | 25[3] | YES | YES |
| 7 | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | Eastbound Shared Left-Turn/Through | 1,000 | 25[3] | 25[3] | YES | YES |

[1] HCM Analysis Software: Vistro, Version 2024.

[2] Storage length for through movements and turning movements without dedicated turn lanes are measured as the distance to the next intersection.

[3] Although the calculated queue is less, a minimum vehicle length of 25 feet is assumed for the purposes of this analysis.

[4] Although the queue exceeds the storage provided, the excess queue can be accommodated within the respective approach's through travel lane.

**Table 7-2**

**Study Intersection HCM 95th Percentile Vehicular Queue Analysis Summary[1]**

**Project Opening Year (2026) Conditions**

| Intersection | | Movement | Storage Length (Feet)[2] | Without Project | | | | With Project | | | | With Improvements[5] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Additional Improvements Required? | |
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 1 | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | Northbound Left-Turn | 280 | 502 | 498 | YES[4] | YES[4] | 502 | 507 | YES[4] | YES[4] | 162 | 209 | NO | NO |
| | | Southbound Left-Turn | 240 | **927** | **1,782** | **NO** | **NO** | **927** | **1,782** | **NO** | **NO** | 247 | 389 | YES | NO[4,6] |
| 2 | U.S. Route 395 (NS) at Poplar Street (EW) | Southbound Left-Turn | 375 | 52 | 25[3] | YES | YES | 55 | 25[3] | YES | YES | 232 | 73 | NO | NO |
| | | Westbound Left-Turn | 540 | 472 | **1,449** | YES | **NO** | **495** | **1,468** | **YES** | **NO** | 242 | 632 | NO | NO[4,6] |
| | | Westbound Shared Through/Right | 540 | 25[3] | 36 | YES | YES | 25[3] | 39 | YES | YES | - - | - - | NO | NO |
| | | *Westbound Right-Turn* | *540* | - - | - - | - - | - - | - - | - - | - - | - - | *33* | *109* | *NO* | *NO* |
| 4 | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | Northbound Left-Turn | 190 | 29 | 35 | YES | YES | 29 | 35 | YES | YES | 29 | 37 | NO | NO |
| | | Northbound Right-Turn | 190 | 79 | 94 | YES | YES | 81 | 95 | YES | YES | 81 | 94 | NO | NO |
| | | Southbound Left-Turn | 225 | 26 | 35 | YES | YES | 26 | 35 | YES | YES | 26 | 37 | NO | NO |
| | | Southbound Right-Turn | 225 | 31 | 25[3] | YES | YES | 31 | 25[3] | YES | YES | 31 | 25[3] | NO | NO |
| 5 | U.S. Route 395 (NS) at Joshua Street (EW) | Northbound Left-Turn | 190 | 70 | 59 | YES | YES | 70 | 59 | YES | YES | 70 | 59 | NO | NO |
| | | Northbound Right-Turn | 330 | 40 | 89 | YES | YES | 40 | 89 | YES | YES | 40 | 89 | NO | NO |
| | | Southbound Left-Turn | 220 | **442** | **876** | **NO** | **NO** | **454** | **897** | **NO** | **NO** | **454** | **897** | **YES** | **YES** |
| | | Westbound Left-Turn | 100 | **117** | **120** | **NO** | **NO** | **117** | **116** | **NO** | **NO** | **117** | **116** | **YES** | **YES** |
| | | Westbound Through | 100 | **249** | **106** | **NO** | **NO** | **249** | **106** | **NO** | **NO** | **249** | **106** | **YES** | **YES** |
| | | Westbound Right-Turn | 100 | **725** | **375** | **NO** | **NO** | **741** | **378** | **NO** | **NO** | **741** | **378** | **YES** | **YES** |
| 6 | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | Southbound Left-Turn | 25 | 25[3] | 25[3] | YES | YES | 25[3] | 25[3] | YES | YES | 25[3] | 25[3] | NO | NO |
| | | Southbound Right-Turn | 1,500 | 454 | 55 | YES | YES | 464 | 56 | YES | YES | 25[3] | 25[3] | NO | NO |
| 7 | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | Eastbound Shared Left-Turn/Through | 1,000 | 25[3] | 38 | YES | YES | 25[3] | 38 | YES | YES | 25[3] | 38 | NO | NO |

[1] HCM Analysis Software: Vistro, Version 2024.

[2] Storage length for through movements and turning movements without dedicated turn lanes are measured as the distance to the next intersection.

[3] Although the calculated queue is less, a minimum vehicle length of 25 feet is assumed for the purposes of this analysis.

[4] Although the queue exceeds the storage provided, the excess queue can be accommodated within the respective approach's through travel lane.

[5] 'With Improvements' includes the recommended intersection operational improvements previously shown in Table 6-4 for Project Opening Year (2026) Conditions.

[6] Although the queue length is forecasted to remain deficient, the intersection operational improvements identified in Table 6-4 offsets the queuing increment from the project. As such, no additional improvements are required to improve queuing for this movement.

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (AM & PM Peak Hour)
- Westbound Through (AM & PM Peak Hour)
- Westbound Right-Turn (AM & PM Peak Hour)

The remaining turning movements have queues that are adequately accommodated by the storage space provided under Project Opening Year (2026) Without Project Conditions.

## 7.3 Project Opening Year (2026) With Project Conditions Queuing Analysis

The queuing analysis results for the analyzed turning movements under Project Opening Year (2026) With Project Conditions are also summarized in Table 7-2.

As shown in Table 7-2, the 95th percentile queues are satisfied for all turning movements with the exception to the following:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Southbound Left-Turn (AM & PM Peak Hour)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Westbound Left-Turn (AM & PM Peak Hour)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (AM Peak Hour)
- Westbound Through (AM Peak Hour)
- Westbound Right-Turn (AM & PM Peak Hour)

The remaining turning movements have queues that are adequately accommodated by the storage space provided under Project Opening Year (2026) With Project Conditions.

## 7.4 Horizon Year (2040) Without Project Conditions Queuing Analysis

The queuing analysis results for the analyzed turning movements under Horizon Year (2040) Without Project Conditions are summarized in **Table 7-3**.

As shown in Table 7-3, the 95th percentile queues are satisfied for all turning movements with the exception to the following:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Northbound Left-Turn (AM & PM Peak Hour)
- Southbound Left-Turn (AM & PM Peak Hour)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (AM & PM Peak Hour)
- Westbound Shared Through/Right-Turn (AM & PM Peak Hour)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (PM Peak Hour)
- Westbound Through (AM & PM Peak Hour)
- Westbound Right-Turn (AM & PM Peak Hour)

The remaining turning movements have queues that are adequately accommodated by the storage space provided under Horizon Year (2040) Without Project Conditions.

## 7.5 Horizon Year (2040) With Project Conditions Queuing Analysis

The queuing analysis results for the analyzed turning movements under Horizon Year (2040) With Project Conditions are also summarized in Table 7-3.

As shown in Table 7-3, the 95th percentile queues are satisfied for all turning movements with the exception to the following:

**Table 7-3**

**Study Intersection HCM 95th Percentile Vehicular Queue Analysis Summary[1]**

**Horizon Year (2040) Conditions**

| Intersection | | Movement | Storage Length (Feet)[2] | Without Project | | | | With Project | | | | With Improvements[5] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Additional Improvements Required? | |
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 1 | U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | Northbound Left-Turn | 280 | **623** | **1,027** | **NO** | **NO** | **623** | **1,037** | **NO** | **NO** | 185 | 263 | NO | NO |
| | | Southbound Left-Turn | 240 | **794** | **2,079** | **NO** | **NO** | **794** | **2,079** | **NO** | **NO** | 223 | 483 | NO | NO[4,6] |
| 2 | U.S. Route 395 (NS) at Poplar Street (EW) | Southbound Left-Turn | 375 | **589** | **1,157** | **NO** | **NO** | **604** | **1,162** | **NO** | **NO** | 305 | 302 | NO | NO |
| | | Westbound Left-Turn | 540 | **1,199** | **1,781** | **NO** | **NO** | **1,218** | **1,803** | **NO** | **NO** | 335 | 280 | NO | NO |
| | | Westbound Shared Through/Right | 540 | **1,506** | **1,437** | **NO** | **NO** | **1,509** | **1,449** | **NO** | **NO** | - - | - - | - - | - - |
| | | *Westbound Shared Left/Through/Right* | *540* | - - | - - | - - | - - | - - | - - | - - | - - | *384* | *448* | *NO* | *NO* |
| | | *Westbound Right-Turn* | *540* | - - | - - | - - | - - | - - | - - | - - | - - | *490* | *567* | NO | NO[6] |
| 4 | U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW) | Northbound Left-Turn | 190 | 35 | 55 | YES | YES | 35 | 55 | YES | YES | 33 | 55 | NO | NO |
| | | Northbound Right-Turn | 190 | 147 | 150 | YES | YES | 150 | 151 | YES | YES | 141 | 151 | NO | NO |
| | | Southbound Left-Turn | 225 | 212 | 355 | YES | YES[4] | 212 | 355 | YES | YES[4] | 225 | 355 | NO | NO[4] |
| | | Southbound Right-Turn | 225 | 38 | 35 | YES | YES | 38 | 35 | YES | YES | 36 | 35 | NO | NO |
| 5 | U.S. Route 395 (NS) at Joshua Street (EW) | Northbound Left-Turn | 190 | 100 | 59 | YES | YES | 100 | 59 | YES | YES | 99 | 62 | NO | NO |
| | | Northbound Right-Turn | 330 | 77 | 72 | YES | YES | 77 | 72 | YES | YES | 76 | 72 | NO | NO |
| | | Southbound Left-Turn | 220 | **653** | **982** | **NO** | **NO** | **672** | **1,001** | **NO** | **NO** | **664** | **1,124** | **YES** | **YES** |
| | | Westbound Left-Turn | 100 | 88 | **756** | YES | **NO** | 88 | **749** | YES | **NO** | 88 | **812** | NO | **YES** |
| | | Westbound Through | 100 | **238** | **103** | **NO** | **NO** | **237** | **103** | **NO** | **NO** | 237 | **109** | **YES** | **YES** |
| | | Westbound Right-Turn | 100 | **654** | **474** | **NO** | **NO** | **648** | **477** | **NO** | **NO** | **677** | **480** | **YES** | **YES** |
| 6 | I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | Southbound Left-Turn | 25 | 25[3] | 33 | YES | YES[4] | 25[3] | 34 | YES | YES[4] | 25[3] | 34 | NO | NO[4] |
| | | Southbound Right-Turn | 1,500 | 243 | 165 | YES | YES | 247 | 167 | YES | YES | 25[3] | 25[3] | NO | NO |
| 7 | I-15 Southbound On-Ramp (NS) at Joshua Street (EW) | Eastbound Shared Left-Turn/Through | 1,000 | 25[3] | 121 | YES | YES | 25[3] | 122 | YES | YES | 25[3] | 122 | NO | NO |

[1] HCM Analysis Software: Vistro, Version 2024.

[2] Storage length for through movements and turning movements without dedicated turn lanes are measured as the distance to the next intersection.

[3] Although the calculated queue is less, a minimum vehicle length of 25 feet is assumed for the purposes of this analysis.

[4] Although the queue exceeds the storage provided, the excess queue can be accommodated within the respective approach's through travel lane.

[5] 'With Improvements' includes the recommended intersection operational improvements previously shown in Table 6-4 for Horizon Year (2040) Conditions.

[6] Although the queue length is forecasted to remain deficient, the intersection operational improvements identified in Table 6-4 offsets the queuing increment from the project. As such, no additional improvements are required to improve queuing for this movement.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Northbound Left-Turn (AM & PM Peak Hour)
- Southbound Left-Turn (AM & PM Peak Hour)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (AM & PM Peak Hour)
- Westbound Shared Through/Right-Turn (AM & PM Peak Hour)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Southbound Left-Turn (AM & PM Peak Hour)
- Westbound Left-Turn (PM Peak Hour)
- Westbound Through (AM & PM Peak Hour)
- Westbound Right-Turn (AM & PM Peak Hour)

The remaining turning movements have queues that are adequately accommodated by the storage space provided under Horizon Year (2040) With Project Conditions.

## 7.6 Queue Analysis Findings

The following study intersections have been identified to have forecasted queues that are not accommodated by the storage space provided under Project Opening Year (2026) and Horizon Year (2040) conditions.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

The recommended operational improvements for the deficient study intersections are discussed in detail in Section 8.0 of this report.

# 8.0 Recommended Operational Improvements

This section of the report outlines the recommended operational improvements to address the identified level of service and queuing deficiencies.

## 8.1 Recommended Operational Improvements

Based on the intersection LOS and queuing analysis findings discussed previously in Sections 6.6 and 7.6 of this report, the project is required to contribute to operational improvements that restore level of service and/or queuing operations to acceptable levels and reduce the project's impact at the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

The recommended operational improvements, identified in **Table 8-1,** are generally consistent with those proposed in Table 26: Proposed Intersection Improvement Measures of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek.

### 8.1.1 Level of Service Operational Improvements

As previously shown in Tables 6-2 and 6-3, implementing the recommended intersection operational improvements in Table 8-1 would restore traffic operations at the study intersections to acceptable levels, in accordance with the identified level of service performance criteria and thresholds of significance.

Detailed LOS analysis worksheets for Project Opening Year (2026) With Project Conditions With Intersection Improvements are included in **Appendix H**. Detailed LOS analysis worksheets for Project Opening Year (2026) With Project Conditions With Intersection Improvements are included in **Appendix I**.

## Table 8-1
## Recommended Operational Improvements[1]

| Intersection | Jurisdiction | Recommended Improvements for Opening Year (2026) With Project Conditions | Additional Recommended Improvements for Horizon Year (2040) With Project Conditions |
|---|---|---|---|
| 1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | City of Hesperia<br>Caltrans | Add a 2nd northbound left-turn lane.<br>Add a 2nd northbound through lane.<br>Add a 2nd southbound left-turn lane.<br>Add a 2nd eastbound through lane.<br>Convert the westbound shared through/right-turn lane to a 2nd westbound through lane, add a 3rd westbound through lane, and add one westbound right-turn lane.<br>Modify signal phase operations to include a westbound right-turn overlap. | Convert the eastbound shared through/right to a 3rd eastbound through lane and add one eastbound right-turn lane.<br>Add a 2nd southbound through lane. |
| 2. U.S. Route 395 (NS) at Poplar Street (EW) | City of Hesperia<br>Caltrans | Install a traffic signal.<br>Convert the westbound approach from one left-turn lane and one shared through/right-turn lane to consist of a left-turn lane, one through lane, and one right-turn lane.<br>Add a 2nd southbound through lane. | Convert the northbound shared through/right-turn lane to a 2nd northbound through lane, add a 3rd northbound through lane, and one northbound right-turn lane.<br>Add a 2nd southbound left-turn lane.<br>Convert the westbound through lane to a shared left/through/right-turn lane. |
| 3. Three Flags Avenue (NS) at Poplar Street (EW) | City of Hesperia | Convert intersection to all-way-stop controlled.<br>Add an eastbound left-turn lane.<br>Convert the eastbound shared left/through/right-turn lane to an eastbound through/right-turn lane. | Install a traffic signal.<br>Convert the northbound approach from a shared left/through/right-turn lane to consist of one left turn and one shared through/right-turn lane.<br>Convert the eastbound shared through/right-turn lane to a through lane and add an eastbound right-turn lane.<br>Add a westbound left-turn lane.<br>Convert the westbound shared left/through/right-turn lane to a westbound through/right-turn lane. |
| 5. U.S. Route 395 (NS) at Joshua Street (EW)[2] | City of Hesperia<br>Caltrans | Add a 2nd southbound left-turn lane.<br>Add a 2nd westbound left-turn lane.<br>Add a 2nd westbound through lane.<br>Modify signal phase operations to include a westbound right-turn overlap. | Same<br>Same<br>Same<br>Same<br>Add a 2nd eastbound left-turn lane. |
| 6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | City of Hesperia<br>Caltrans | - - | Modify the southbound right-turn lane to a channelized right-turn lane. |

[1] Recommended intersection improvements are generally consistent with those proposed in Table 26: Proposed Intersection Improvement Measures of the *I-15 Industrial Park Project Traffic Impact Analysis* , dated October 2022, prepared by Dudek.

[2] Recommended queuing improvements are highlighted in green.

### 8.1.2 Queuing Operational Improvements

The recommended operational improvements aimed at addressing level of service deficiencies for the Project Opening Year (2026) With Project Conditions and Horizon Year (2040) With Project Conditions would significantly improve queuing conditions at all study intersections. However, as previously shown in Tables 7-2 and 7-3, despite these improvements, the following turning movement queues were not restored to pre-project levels after implementing the intersection operational improvements:

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Southbound Left-Turn
- Westbound Left-Turn
- Westbound Through
- Westbound Right-Turn

As a result, additional operational improvements to address the remaining queuing deficiencies are also identified in Table 8-1, highlighted in green.

**Table 8-2** summarizes the queuing analysis results for the four (4) identified queues after the implementation of both the recommended intersection and additional queuing operational improvements.

Assuming the implementation of these additional queuing operational improvements, the four (4) identified queues would be reduced to pre-project levels.

Detailed LOS analysis worksheets for Project Opening Year (2026) With Project Conditions With Intersection + Queuing Improvements are included in **Appendix J**. Detailed LOS analysis worksheets for Project Opening Year (2026) With Project Conditions With Intersection + Queuing Improvements are included in **Appendix K**.

## 8.2 Project Fair-Share Contributions

Fair-share contributions are calculated based on the project's trip contributions relative to the overall growth from existing traffic conditions. The fair-share contribution percentages under Project Opening Year (2026) With Project Conditions and Horizon Year (2040) With Project Conditions are provided in **Table 8-3** and **Table 8-4** respectively.

**Table 8-2**

**Study Intersection HCM 95th Percentile Vehicular Queue Analysis Summary[1]**

**Project Opening Year (2026) & Horizon Year (2040) Conditions With Recommended Intersection & Queuing Improvements**

| Intersection | | Movement | Storage Length (Feet)[2] | Project Opening Year (2026) | | | | | | | | Horizon Year (2040) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Without Project | | | | With Project With Recommended Intersection & Queueing Improvements[3] | | | | Without Project | | | | With Project With Recommended Intersection & Queueing Improvements[3] | | | |
| | | | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | | HCM 95th Percentile Queue Length (Feet) | | Adequate Storage Provided? | |
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 5. | U.S. Route 395 (NS) at Joshua Street (EW) | Southbound Left-Turn | 220 | **442** | **876** | **NO** | **NO** | 194 | 265 | YES | YES[4] | **653** | **982** | **NO** | **NO** | 208 | 267 | YES | YES[4] |
| | | Westbound Left-Turn | 100 | **117** | **120** | **NO** | **NO** | 60 | 42 | YES | YES | 88 | **756** | YES | **NO** | 45 | 142 | YES | YES[4] |
| | | Westbound Through | 100 | **249** | **106** | **NO** | **NO** | 131 | 41 | YES[4] | YES | **238** | **103** | **NO** | **NO** | 123 | 41 | YES[4] | YES |
| | | Westbound Right-Turn | 100 | **725** | **375** | **NO** | **NO** | 555 | 228 | YES[4] | YES[4] | **654** | **474** | **NO** | **NO** | 507 | 394 | YES[4] | YES[4] |

[1] HCM Analysis Software: Vistro, Version 2024.

[2] Storage length for through movements and turning movements without dedicated turn lanes are measured as the distance to the next intersection.

[3] Improvements includes the recommended intersection and queueing operational improvements shown in Table 6-4 and Table 7-4 for Horizon Year (2040) Conditions respectively.

[4] Although the queue length is forecasted to remain deficient, the intersection and queueing operational improvements identified in Table 6-4 and Table 7-4 offsets the queuing increment from the project. As such, no additional improvements are required to improve queuing for this movement.

## Table 8-3
## Project Fair-Share Summary
## Project Opening Year (2026) With Project Conditions

| Intersection | Peak Hour | Existing Traffic | Project Traffic | Project Opening Year (2026) With Project Conditions | Growth in Traffic | Project Fair-Share Percentage (%) |
|---|---|---|---|---|---|---|
| 1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | AM | 3,674 | 4 | 5,874 | 2,200 | 0.18% |
| | PM | 4,273 | 6 | 6,546 | 2,273 | **0.26%** |
| 2. U.S. Route 395 (NS) at Poplar Street (EW) | AM | 1,857 | 17 | 3,284 | 1,427 | 1.19% |
| | PM | 2,390 | 17 | 3,755 | 1,365 | **1.25%** |
| 3. Three Flags Avenue (NS) at Poplar Street (EW) | AM | 142 | 22 | 1,058 | 916 | **2.40%** |
| | PM | Not Impacted Under This Period | | | | |
| 5. U.S. Route 395 (NS) at Joshua Street (EW) | AM | 2,412 | 17 | 4,250 | 1,838 | 0.92% |
| | PM | 2,780 | 17 | 4,597 | 1,817 | **0.94%** |
| 6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | AM | 328 | 7 | 1,137 | 809 | **0.87%** |
| | PM | Not Impacted Under This Period | | | | |

## Table 8-4
## Project Fair-Share Summary
## Horizon Year (2040) With Project Conditions

| Intersection | Peak Hour | Existing Traffic | Project Traffic | Horizon Year (2040) With Project Conditions | Growth in Traffic | Project Fair-Share Percentage (%) |
|---|---|---|---|---|---|---|
| 1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | AM | 3,674 | 4 | 7,627 | 3,953 | 0.10% |
| | PM | 4,273 | 6 | 7,598 | 3,325 | **0.18%** |
| 2. U.S. Route 395 (NS) at Poplar Street (EW) | AM | 1,857 | 17 | 5,320 | 3,463 | 0.49% |
| | PM | 2,390 | 17 | 5,583 | 3,193 | **0.53%** |
| 3. Three Flags Avenue (NS) at Poplar Street (EW) | AM | 142 | 22 | 2,760 | 2,618 | 0.84% |
| | PM | 194 | 22 | 2,383 | 2,189 | **1.01%** |
| 5. U.S. Route 395 (NS) at Joshua Street (EW) | AM | Not Impacted Under This Period | | | | |
| | PM | 2,780 | 17 | 5,386 | 2,606 | **0.65%** |
| 6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | AM | Not Impacted Under This Period | | | | |
| | PM | | | | | |

**Table 8-5** summarizes the costs associated with the proposed operational improvements. These cost estimates are based on figures from Table 28: Project Fair Share Cost Estimates of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek. The costs are approximate. Additionally, Table 8-4 includes the fair-share contributions expected from the project for each improvement.

As shown in Table 8-5, the project fair share costs for the study intersections are listed below:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) [$4,434.42]

Int #2. U.S. Route 395 (NS) at Poplar Street (EW) [$7,379.62]

Int #3. Three Flags Avenue (NS) at Poplar Street (EW) [$12,608.10]

Int #5. U.S. Route 395 (NS) at Joshua Street (EW) [$7,711.79]

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) [$2,889.84]

**Table 8-5**

**Project Fair-Share Contribution Summary[1]**

| Intersection | Jurisdiction | Recommended Improvements for Opening Year (2026) With Project Conditions | Additional Recommended Improvements for Horizon Year (2040) With Project Conditions | Cost of Improvement[2] | Project Fair-Share (%) | Project Fair-Share Costs |
|---|---|---|---|---|---|---|
| 1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) | City of Hesperia<br>Caltrans | Add a 2nd northbound left-turn lane. | | $92,268.50 | 0.26% | $239.90 |
| | | Add a 2nd northbound through lane. | | $332,166.00 | 0.26% | $863.63 |
| | | Add a 2nd southbound left-turn lane. | | $92,268.50 | 0.26% | $239.90 |
| | | Add a 2nd eastbound through lane. | | $332,166.00 | 0.26% | $863.63 |
| | | Convert the westbound shared through/right-turn lane to a 2nd westbound through lane, add a 3rd westbound through lane, and add one westbound right-turn lane. | | $424,434.50 | 0.26% | $1,103.53 |
| | | Modify signal phase operations to include a westbound right-turn overlap. | | $138,403.00 | 0.26% | $359.85 |
| | | | Convert the eastbound shared through/right to a 3rd eastbound through lane and add one eastbound right-turn lane. | $92,268.50 | 0.18% | $166.08 |
| | | | Add a 2nd southbound through lane. | $332,166.00 | 0.18% | $597.90 |
| | | | ***Intersection #1 Cost Subtotal*** | ***$1,836,141.00*** | | ***$4,434.42*** |
| 2. U.S. Route 395 (NS) at Poplar Street (EW) | City of Hesperia<br>Caltrans | Install a traffic signal. | | $0[4] | 1.25% | $0.00 |
| | | Convert the westbound approach from one left-turn lane and one shared through/right-turn lane to consist of a left-turn lane, one through lane, and one right-turn lane. | | $0[4] | 1.25% | $0.00 |
| | | Add a 2nd southbound through lane. | | $332,166.00 | 1.25% | $4,152.08 |
| | | | Convert the northbound shared through/right-turn lane to a 2nd northbound through lane, add a 3rd northbound through lane, and one northbound right-turn lane. | $424,434.50 | 0.53% | $2,249.50 |
| | | | Add a 2nd southbound left-turn lane. | $92,268.50 | 0.53% | $489.02 |
| | | | Convert the westbound through lane to a shared left/through/right-turn lane. | $92,268.50 | 0.53% | $489.02 |
| | | | ***Intersection #2 Cost Subtotal*** | ***$941,137.50*** | | ***$7,379.62*** |
| 3. Three Flags Avenue (NS) at Poplar Street (EW) | City of Hesperia | Convert intersection to all-way-stop controlled. | | | | |
| | | Add an eastbound left-turn lane.<br>Convert the eastbound shared left/through/right-turn lane to an eastbound through/right-turn lane. | | $92,268.50 | 2.40% | $2,214.44 |
| | | | Install a traffic signal. | $706,136.00 | 1.01% | $7,131.97 |
| | | | Convert the northbound approach from a shared left/through/right-turn lane to consist of one left turn and one shared through/right-turn lane. | $92,268.50 | 1.01% | $931.91 |
| | | | Convert the eastbound shared through/right-turn lane to a through lane and add an eastbound right-turn lane. | $138,403.00 | 1.01% | $1,397.87 |
| | | | Add a westbound left-turn lane.<br>Convert the westbound shared left/through/right-turn lane to a westbound through/right-turn lane. | $92,268.50 | 1.01% | $931.91 |
| | | | ***Intersection #3 Cost Subtotal*** | ***$1,121,344.50*** | | ***$12,608.10*** |
| 5. U.S. Route 395 (NS) at Joshua Street (EW)[3] | City of Hesperia<br>Caltrans | Add a 2nd southbound left-turn lane. | | $332,166.00 | 0.94% | $3,122.36 |
| | | Add a 2nd westbound left-turn lane. | | $332,166.00 | 0.94% | $3,122.36 |
| | | Add a 2nd westbound through lane. | | $92,268.00 | 0.94% | $867.32 |
| | | Modify signal phase operations to include a westbound right-turn overlap. | | | | |
| | | | Add a 2nd eastbound left-turn lane. | $92,268.50 | 0.65% | $599.75 |
| | | | ***Intersection #5 Cost Subtotal*** | ***$848,868.50*** | | ***$7,711.79*** |
| 6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) | City of Hesperia<br>Caltrans | Modify the southbound right-turn lane to a channelized right-turn lane. | | $332,166.00 | 0.87% | $2,889.84 |
| | | | ***Intersection #6 Cost Subtotal*** | ***$332,166.00*** | | ***$2,889.84*** |
| | | | ***City of Hesperia Intersections (Intersection #3) Subtotal [A]*** | ***$1,121,344.50*** | | ***$12,608.10*** |
| | | | ***Caltrans' Intersections (Intersections #1, #2, #5, #6) Subtotal [B]*** | ***$3,958,313.00*** | | ***$22,415.67*** |
| | | | ***Total Intersection Costs Subtotal [A] + [B]*** | ***$5,079,657.50*** | | ***$35,023.77*** |

1 Project fait-share contribution will be required and become a Project Conditions of Approval.

2 Improvement costs are estimated based on the figures referenced in Table 28: Project Fair Share Cost Estimates from the *I-15 Industrial Park Project Traffic Impact Analysis* , dated October 2022, prepared by Dudek. The costs shown are approximate.

3 Recommended queuing improvements are highlighted in green.

4 The *I-15 Industrial Park Project Traffic Impact Analysis* , dated October 2022, prepared by Dudek, specifies that the installation of a traffic signal at the U.S. Route 395 and Poplar Street intersection will be constrcuted and fully funded by the I-15 Industrial Park project. In the event that the proposed project (i.e., Cargo Solutions) is constructed prior to the installation of this proposed traffic signal, Cargo Solutions shall be responsible for the installation/construction of this traffic signal and will be reimbursed by the I-15 Industrial Park Development in the future.

# 9.0 Site Access and Circulation Review

The following section provides a qualitative review of the proposed project's site access and internal circulation. This review aims to analyze the adequacy of turning capabilities, driveway dimensions, curb radii, and street widths along Poplar Street and Mesa Linda Street, specifically in relation to WB-67 trucks. Additionally, a qualitative examination will be performed to identify potential conflicts that may arise from truck maneuvers within the site.

## 9.1 Site Access and Circulation

Access to the project site is planned to be served by four (4) full-access unsignalized driveways located along Poplar Street. These driveways will accommodate vehicular and truck traffic in the designated manner outlined below:

Project Access Driveway 1

Project Access Driveway 1, located at the northwest corner of the site, is exclusively designed for passenger vehicle traffic serving the Building No. 1 Warehouse. Upon entering the site through this driveway, vehicles will have direct access to the staff parking lot. The driveway aisles within this area range from 30.5 to 31 feet in width, providing ample space for vehicle maneuverability.

Project Access Driveway 2

Project Access Driveway 2, located east of Driveway 1, spans approximately 40 feet in width. This driveway caters to employee vehicles and trucks associated with the Building No. 1 Warehouse. Trucks entering through this driveway will travel along the eastern side of the warehouse, where WB-67 truck parking spaces, approximately 72 feet in length, are designated on both the eastern and southern sections of the site.

The loading docks for the warehouse are positioned on the southern side of the building. Drive aisles in this area vary in width, ranging from approximately 63.5 to 86.5 feet, allowing trucks to efficiently reverse into the loading docks. Additionally, parking spaces for semi-trucks without attached trailers are provided along the southern boundary of the site.

Project Access Driveway 3

Project Access Driveway 3, located along the northern portion of the site, serves employee vehicles and trucks associated with the Building No. 2 Warehouse. Trucks entering through this driveway will proceed south along a 64.5-foot drive aisle. Trucks will then travel on the western side of the warehouse, where WB-67 truck parking spaces, approximately 72 feet in length, are designated on both the western and eastern sections of the site.

Project Access Driveway 4

Project Access Driveway 4, located east of Driveway 3, serves as the access point for passenger vehicles for the Building No. 2 Warehouse. Upon entering the site through this driveway, vehicles will have direct access to the staff parking lot. The driveway aisles in this area range from 30.0 to 35 feet in width, providing ample space for vehicle maneuverability.

## 9.2 Level of Service Analysis at Project Access Driveways

### 9.2.1 Project Opening Year (2026) With Project Conditions Level of Service

Project Opening Year (2026) With Project Conditions LOS calculations for the four (4) project access driveways are reported in **Table 9-1** and are based on the Project Opening Year (2026) With Project Conditions traffic volumes shown in Exhibit 4-11 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As shown in Table 8-1, all project access driveways are forecast to operate at an acceptable LOS during the peak hours under Project Opening Year (2026) With Project Conditions.

Detailed LOS analysis worksheets for the four (4) project access driveways under Project Opening Year (2026) With Project Conditions are also included in **Appendix E**.

### 9.2.2 Horizon Year (2040) With Project Conditions Level of Service

Horizon Year (2040) With Project Conditions LOS calculations for the four (4) project access driveways are also reported in **Table 9-2** and are based on the Horizon Year (2040) With Project Conditions traffic volumes shown in Exhibit 4-13 and the future year traffic controls & intersection geometrics shown in Exhibit 4-9.

As shown in Table 8-2, all study intersections are forecast to operate at an acceptable LOS during the peak hours under Horizon Year (2040) With Project Conditions.

Detailed LOS analysis worksheets for the four (4) project access driveways under Horizon Year (2040) With Project Conditions are also included in **Appendix G**.

## Table 9-1
## Project Site Access Driveway LOS Analysis Summary
## Project Opening Year (2026) With Project Conditions

| | Study Intersection | Traffic Control[1,2] | Methodology | Acceptable LOS[3] | Delay (sec/veh)[3,4,5] | | Level of Service | | Requires LOS Improvement? | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | AM | PM | AM | PM | AM | PM |
| 8. | Project Access Driveway 1 (NS) at Poplar Street (EW) | CSS | HCM | D | 13.7 | 12.7 | B | B | NO | NO |
| 9. | Project Access Driveway 2 (NS) at Poplar Street (EW) | CSS | HCM | D | 15.8 | 15.2 | C | C | NO | NO |
| 10. | Project Access Driveway 3 (NS) at Poplar Street (EW) | CSS | HCM | D | 15.7 | 15.2 | C | C | NO | NO |
| 11. | Project Access Driveway 4 (NS) at Poplar Street (EW) | CSS | HCM | D | 13.5 | 12.6 | B | B | NO | NO |

[1] CSS = Cross-Street Stop.

[2] For cross-street stop controlled intersections, level of service is based on on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

[3] In compliance with Implementation Policy CI-2.1 of the City of Hesperia General Plan, LOS D should be maintained and aimed for at all intersections.

[4] Deficient operation shown in **Bold**.

[5] HCM Analysis Software: PTV Vistro, Version 2024.

## Table 9-2
## Project Site Access Driveway LOS Analysis Summary
## Horizon Year (2040) With Project Conditions

| | Study Intersection | Traffic Control[1,2] | Methodology | Acceptable LOS[3] | Delay (sec/veh)[3,4,5] | | Level of Service | | Requires LOS Improvement? | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | AM | PM | AM | PM | AM | PM |
| 8. | Project Access Driveway 1 (NS) at Poplar Street (EW) | CSS | HCM | D | 25.7 | 20.6 | D | C | NO | NO |
| 9. | Project Access Driveway 2 (NS) at Poplar Street (EW) | CSS | HCM | D | 34.4 | 29.3 | D | D | NO | NO |
| 10. | Project Access Driveway 3 (NS) at Poplar Street (EW) | CSS | HCM | D | 34.2 | 29.1 | D | D | NO | NO |
| 11. | Project Access Driveway 4 (NS) at Poplar Street (EW) | CSS | HCM | D | 25.4 | 20.4 | D | C | NO | NO |

[1] CSS = Cross-Street Stop.

[2] For cross-street stop controlled intersections, level of service is based on on the worst stop-controlled approach from the minor street or an individual movement from the major street, whichever is worse.

[3] In compliance with Implementation Policy CI-2.1 of the City of Hesperia General Plan, LOS D should be maintained and aimed for at all intersections.

[4] Deficient operation shown in **Bold**.

[5] HCM Analysis Software: PTV Vistro, Version 2024.

## 9.3 WB-67 Truck Maneuverability Assessment

After thorough examination of the project site plan, shown in Exhibit 1-2 and designed by the Amor Architectural Corporation, RK has concluded that the WB-67 truck turning templates illustrated on the plan showcase satisfactory truck turning capabilities both within the site and in external areas. This comprehensive review ensures that the design adequately accommodates the maneuverability requirements of WB-67 trucks, promoting efficient truck movements throughout the site.

# 10.0 Vehicle Miles Traveled (VMT) Analysis

The *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020, provides recommendations in the form of thresholds of significance and methodologies for identifying VMT related impacts. The proposed project is subject to a VMT analysis and will adhere to the recommendations and practices described in the City's guidelines.

## 10.1 VMT Screening Criteria & Assessment

The City of Hesperia has adopted three (3) types of screening criteria that can be applied to effectively screen projects from project-level assessment. The screening steps are summarized below:

- Step 1: Transit Priority Area (TPA) Screening
- Step 2: Low VMT Area Screening
- Step 3: Project Type Screening

### 10.1.1 Step 1: Transit Priority Area (TPA) Screening

Based on the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020, "Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary." However, this presumption may not be appropriate if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate or high-income residential units.

A transit priority area is defined as a half mile area around an existing major transit stop or a high-quality transit corridor. A major transit stop refers to a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency service interval of 15 minutes or less during the morning and afternoon

peak commute periods. A high-quality transit corridor refers to a corridor with fixed route bus service intervals no longer than 15 minutes during peak commute hours.

Based on a review of the Victor Valley Transit Authority (VVTA) and the City of Hesperia Bus Route Maps, there are no transit services located within a ½ mile of the project site. As such, the project does not satisfy the screening criteria based on the Transit Priority Area Screening.

### 10.1.2 Step 2: Low VMT Area Screening

Per the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020:

> "Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area."

To identify if the project is in a low VMT-generating area, the San Bernardino County Transportation Authority (SBCTA) VMT screening tool was utilized to compare the project's baseline TAZ VMT to the County's baseline VMT metric. Utilizing the SBCTA VMT screening tool, the following inputs were selected: Since the project is exclusively an industrial use (i.e., warehousing), the "PA VMT Per Worker" metric was utilized for evaluation.

The results of the VMT screening analysis are summarized in **Table 10-1**. The SBCTA VMT Screening Tool Printouts are provided in **Appendix L**.

**Table 10-1**
**Step 2: Low VMT Area Screening Assessment[1,2]**

| Project TAZ | Baseline Year | PA VMT Per Worker |
|---|---|---|
| 53901401 | 2024 | 16.0 |
| County of San Bernardino VMT Threshold of Significance | | 16.9 |
| Potentially Significant Impact (Yes/No) | | No |

[1.] San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool

[2.] Website: https://sbcta-gis.sanbag.ca.gov/gisportal/apps/webappviewer/index.html?id=3cd02c669e3442e79f732be92d26d320 Accessed: September, 2024.

Based on the results of the SBCTA VMT screening tool, the proposed project's TAZ VMT was calculated to be 16.0 PA VMT Per Worker which does not exceed the County VMT threshold of significance of 16.9 VMT Per Worker. Therefore, the proposed project does satisfy the Low VMT-Generating Area Screening and may be presumed to have a less than significant impact on VMT under CEQA.

### 10.1.3 Step 3: Low Project Type Screening

The *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment*, dated July 2020, identify that projects generating less than 110 daily vehicle trips may be presumed to have a less than significant impact on VMT under CEQA.

Additionally, certain project types are eligible to screen from a project-level VMT assessment because they can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature. These types of projects include:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving gas stations
- Local-serving banks
- Local-serving hotels (e.g. non-destination hotels)
- Local-serving medical
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local serving community colleges that are consistent with the assumptions noted in the
- RTP/SCS
- Affordable or supportive housing
- Assisted living facilities

Given the project's land use and size, this screening criterion is not applicable and does not meet the requirements of Step 3: Project Type Screening.

## 10.2 VMT Screening Assessment Conclusions

The Project meets the Step 2: Low VMT Area screening criteria. As such, the project may be presumed to have a less than significant impact on VMT and no additional VMT analysis is required.

# 11.0 Findings and Recommendations

## 11.1 Project Description Summary

The project site is located at the southeast corner of Three Flags Avenue and Poplar Street in the City of Hesperia, CA. The project site spans approximately 2.303 acres and is currently vacant.

The proposed project is planned to consist of the following land uses:

- One (1) warehouse building (Building No. 1) totaling 75,894 square feet (SF); and
- One (1) warehouse building (Building No. 2) totaling 75,894 square feet (SF); and

The project is expected to open in 2026 and will be evaluated in one (1) single phase.

Access to the project is proposed via four (4) full-access unsignalized driveways located along Poplar Street:

- Driveway 1: Serves Building No. 1 warehouse for passenger vehicle traffic;
- Driveway 2: Serves Building No. 1 warehouse for truck traffic;
- Driveway 3: Serves Building No. 2 warehouse for truck traffic; and
- Driveway 4: Serves Building No. 2 warehouse for passenger vehicle traffic.

## 11.2 Traffic Study Area & Analysis Scenarios Summary

The study area included in this analysis has been determined based on existing and future transportation facilities within the vicinity of the site where the project may contribute a significant amount of traffic. The study area consists of the following eleven (11) intersections listed below. The jurisdiction where each key study intersection is also identified.

Int #1. U.S. Route 395 at Main Street - Phelan Road [City of Hesperia, Caltrans];

Int #2. U.S. Route 395 at Poplar Street [City of Hesperia, Caltrans];

Int #3. Three Flags Avenue at Poplar Street [City of Hesperia];

Int #4. U.S. Route 395 at Three Flags Road - Three Flags Court [City of Hesperia, Caltrans];

Int #5. U.S. Route 395 at Joshua Street [City of Hesperia, Caltrans];

Int #6. I-15 Southbound Off-Ramp at Joshua Street [City of Hesperia, Caltrans];

Int #7. I-15 Southbound On-Ramp at Joshua Street [City of Hesperia, Caltrans];

Int #8. Project Access Driveway 1 at Poplar Street [City of Hesperia];

Int #9. Project Access Driveway 2 at Poplar Street [City of Hesperia];

Int #10. Project Access Driveway 3 at Poplar Street [City of Hesperia]; and

Int #11. Project Access Driveway 4 at Poplar Street [City of Hesperia].

The analysis evaluates traffic conditions of the study area under the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods:

- Existing Conditions
- Project Opening Year (2026) Without Project Conditions
- Project Opening Year (2026) With Project Conditions
- Horizon Year (2040) Without Project Conditions
- Horizon Year (2040) With Project Conditions

## 11.3 Project Trip Generation Summary

The proposed project, based on the trip generation rates and truck mix recommendations from SCAQMD, is forecast to generate approximately 260 actual vehicle daily trips with 26 actual vehicle trips in the AM peak hour and 28 actual vehicle trips in the PM peak hour (i.e., no adjustments for truck traffic). After the application of appropriate passenger car equivalent (PCE) factors and ITE pass-by adjustments, the proposed project is forecast to generate approximately 402 daily PCE trips with 34 PCE trips in the AM peak hour and 36 PCE trips in the PM peak hour.

## 11.4 CA MUTCD Warrant Analysis Summary

The following study intersection has been evaluated for signalization based on the peak hour signal warrants and procedures contained in the California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition, Revision 9 (April 1, 2025):

Int #1. U.S. Route 395 at Poplar Street

Int #2. Three Flags Avenue at Poplar Street

The peak hour traffic signal warrants are satisfied for both unsignalized study intersections under the following analysis scenarios and time periods:

Int #1. U.S. Route 395 at Poplar Street

- Project Opening Year (2026) Without Project Conditions (AM & PM Peak Hours)
- Project Opening Year (2026) With Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) Without Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) With Project Conditions (AM & PM Peak Hours)

Int #2. Three Flags Avenue at Poplar Street

- Horizon Year (2040) Without Project Conditions (AM & PM Peak Hours)
- Horizon Year (2040) With Project Conditions (AM & PM Peak Hours)

## 11.5 Study Intersection Peak Hour LOS Analysis Summary

The intersection level of service analysis has been performed at the seven (7) study intersections within the vicinity of the site where the project may contribute a significant amount of traffic. Project deficiencies have been evaluated within the study area based on peak hour level of service performance criteria and thresholds of significance.

Int #1. U.S. Route 395 at Main Street - Phelan Road [City of Hesperia, Caltrans];

Int #2. U.S. Route 395 at Poplar Street [City of Hesperia, Caltrans];

Int #3. Three Flags Avenue at Poplar Street [City of Hesperia];

Int #4. U.S. Route 395 at Three Flags Road - Three Flags Court [City of Hesperia, Caltrans];

Int #5. U.S. Route 395 at Joshua Street [City of Hesperia, Caltrans];

Int #6. I-15 Southbound Off-Ramp at Joshua Street [City of Hesperia, Caltrans];

Int #7. I-15 Southbound On-Ramp at Joshua Street [City of Hesperia, Caltrans];

The following study intersections have been identified to require operational improvements to restore traffic operations to acceptable levels of service and reduce the project's impact to less than significant levels under Project Opening Year (2026) and/or Horizon Year (2040) conditions.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

## 11.6 Intersection Queuing Analysis Summary

The following study intersections have been identified to have forecasted queues that are not accommodated by the storage space provided under Project Opening Year (2026) and/or Horizon Year (2040) conditions.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

## 11.7 Recommended Operational Improvements Summary

The project is required to contribute to operational improvements that restore level of service and/or queuing operations to acceptable levels and reduce the project's impact at the following study intersections:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

The recommended operational improvements listed below are generally consistent with those proposed in Table 26: Proposed Intersection Improvement Measures of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek.

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)

- Add a 2nd northbound left-turn lane.
- Add a 2nd northbound through lane.
- Add a 2nd southbound left-turn lane.
- Add a 2nd eastbound through lane.
- Convert the westbound shared through/right-turn lane to a 2nd westbound through lane, add a 3rd westbound through lane, and add one westbound right-turn lane.
- Modify signal phase operations to include a westbound right-turn overlap.
- Convert the eastbound shared through/right to a 3rd eastbound through lane and add one eastbound right-turn lane.
- Add a 2nd southbound through lane.

Int #2. U.S. Route 395 (NS) at Poplar Street (EW)

- Install a traffic signal.
- Convert the westbound approach from one left-turn lane and one shared through/right-turn lane to consist of a left-turn lane, one through lane, and one right-turn lane.
- Add a 2nd southbound through lane.
- Convert the northbound shared through/right-turn lane to a 2nd northbound through lane, add a 3rd northbound through lane, and one northbound right-turn lane.
- Add a 2nd southbound left-turn lane.
- Convert the westbound through lane to a shared left/through/right-turn lane.

Int #3. Three Flags Avenue (NS) at Poplar Street (EW)

- Convert intersection to all-way-stop controlled.
- Add an eastbound left-turn lane.
- Convert the eastbound shared left/through/right-turn lane to an eastbound through/right-turn lane.
- Install a traffic signal.
- Convert the northbound approach from a shared left/through/right-turn lane to consist of one left turn and one shared through/right-turn lane.
- Convert the eastbound shared through/right-turn lane to a through lane and add an eastbound right-turn lane.
- Add a westbound left-turn lane.
- Convert the westbound shared left/through/right-turn lane to a westbound through/right-turn lane.

Int #5. U.S. Route 395 (NS) at Joshua Street (EW)

- Add a 2nd southbound left-turn lane.
- Add a 2nd westbound left-turn lane.
- Add a 2nd westbound through lane.
- Modify signal phase operations to include a westbound right-turn overlap.
- Add a 2nd eastbound left-turn lane.

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)

- Modify the southbound right-turn lane to a channelized right-turn lane.

With the implementation of these operational improvements, the study intersections will be restored to acceptable levels of service, and any queuing deficiencies caused by the project will be reduced to pre-project levels.

## 11.8 Project Fair-Share Contribution Summary

The project fair share costs for the study intersections are listed below:

Int #1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW) [$4,434.42]

Int #2. U.S. Route 395 (NS) at Poplar Street (EW) [$7,379.62]

Int #3. Three Flags Avenue (NS) at Poplar Street (EW) [$12,608.10]

Int #5. U.S. Route 395 (NS) at Joshua Street (EW) [$7,711.79]

Int #6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW) [$2,889.84]

These cost estimates are based on figures from Table 28: Project Fair Share Cost Estimates of the *I-15 Industrial Park Project Traffic Impact Analysis*, dated October 2022, prepared by Dudek. The costs are approximate.

## 11.9 Site Access and Circulation Review Summary

Access to the project site is planned to be served by four (4) full-access unsignalized driveways located along Poplar Street.

These driveways will accommodate vehicular and truck traffic in the designated manner outlined below:

- **Project Access Driveway 1**: Utilized by passenger vehicles serving the Building No. 1 Warehouse.
- **Project Access Driveway 2**: Utilized by employee vehicles and trucks associated with the Building No. 1 Warehouse.
- **Project Access Driveway 3**: Utilized by employee vehicles and trucks associated with the Building No. 2 Warehouse.
- **Project Access Driveway 4**: Utilized by passenger vehicles serving the Building No. 2 Warehouse.

The intersection level of service analysis has been performed at the four (4) project access driveways within the vicinity of the site where the project may contribute a significant amount of traffic. Project deficiencies have been evaluated within the study area based on peak hour level of service performance criteria and thresholds of significance.

All project access driveways are forecast to operate at an acceptable LOS during the peak hours under Project Opening Year (2026) With Project Conditions and Horizon Year (2040) With Project Conditions.

After thorough examination of the project site plan, RK has concluded that the WB-67 truck turning templates illustrated on the plan showcase satisfactory truck turning capabilities both within the site and in external areas. This comprehensive review ensures that the design adequately accommodates the maneuverability requirements of WB-67 trucks, promoting efficient truck movements throughout the site.

## 11.10 Vehicle Miles Traveled (VMT) Analysis Summary

The Project meets the Step 2: Low VMT Area screening criteria. As such, the project may be presumed to have a less than significant impact on VMT and no additional VMT analysis is required.

# Appendices

# Appendix A

Approved Scope of Work

Recommended Acceptance: Justin N. Schlaefli 5/15/23

# Project Scoping Form

This scoping form shall be submitted to the City of Hesperia to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

## Project Identification:

| | |
|---|---|
| Case Number: | |
| Related Cases: | |
| SP No. | |
| EIR No. | |
| GPA No. | |
| CZ No. | |
| Project Name: | Cargo Solution Express Warehouse Project |
| Project Address: | SEC Corner of Three Flags Avenue and Poplar Street, Hesperia, CA. |
| Project Opening Year: | 2025 |
| Project Description: | One (1) 74,924 S.F. Warehouse Building |
| | One Truck Stop Facility with Eight (8) Vehicle Fueling Positions. |
| | |

| | **Consultant:** | **Developer:** |
|---|---|---|
| Name: | Justin Tucker, P.E. | Cargo Solution Express Inc. |
| Address: | 1401 Dove Street, Suite 540 | 14587 & 14589 Valley Boulevard |
| | Newport Beach, CA 92660 | Fontana, CA 92335 |
| Telephone: | (949) 474-0809 | (909) 350-1644 |
| Fax/Email: | jt@rkengineer.com | |

## Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, 11th Edition, 2017
South Coast Air Quality Management District (SCAMD)

Current General Plan Land Use: CIBP - Com/Ind Business Park

Proposed General Plan Land Use: CIBP - Com/Ind Business Park

Current Zoning: CIBP - Com/Ind Business Park

Proposed Zoning: CIBP - Com/Ind Business Park

| | Existing Trip Generation | | | Proposed Trip Generation | | |
|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total |
| AM Trips | - - | - - | - - | 177 | 176 | 353 |
| PM Trips | - - | - - | - - | 201 | 184 | 385 |

Please See Table 1 in attached scope of work for detailed project trip generation.

Trip Internalization: ☐ Yes ☑ No (_____% Trip Discount)

Pass-By Allowance: ☐ Yes ☑ No (_____% Trip Discount)

## Potential Screening Checks

Is your project screened from specific analyses (see Page 11 of the guidelines related to LOS assessment and Pages 24-26).

***Is the project screened from LOS assessment?*** ☐ Yes ☑ No

LOS screening justification (see Page 11 of the guidelines): _____

***Is the project screened from VMT assessment?*** ☐ Yes ☑ No

VMT screening justification (see Pages 24-26 of the guidelines): _____

## Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution): Please Exhibits C-1, C-2, D-1, and D-2 for project trip distribution classified by passenger vehicle and Truck vehicle types.

| North | South | East | West |
|---|---|---|---|
| - -% | - -% | - -% | - -% |

- Attach list of Approved and Pending Projects that need to be considered (provided by the City Traffic Engineer and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach site plan
- Note other specific items to be addressed:
  - Site access
  - On-site circulation
  - Parking
  - Consistency with Plans supporting Bikes/Peds/Transit
  - Other _____
- Date of Traffic Counts _____
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased)

## VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach SBCTA Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

# CARGO SOLUTION EXPRESS WAREHOUSE PROJECT
# Traffic Impact Study
# Scoping Agreement

## April 28, 2023

The following provides information on the proposed project, summarizes the analysis scope, parameters, and assumptions for review and approval, and includes requests for information on items related to the study.

**A. Project Description:** The proposed Cargo Solution Express Warehouse project is located at the southeast corner of Three Flags Avenue and Poplar Street in the City of Hesperia, CA. The 2.303-acre site is currently vacant.

The proposed project is planned to consist of the following land uses:

- One (1) warehousing building totaling 74,924 square feet (SF); and
- One truck stop facility providing eight (8) vehicle fueling positions.

Access to the project is proposed via four (4) full-access unsignalized driveways located along Poplar Street.

Exhibit A shows the location map of the proposed project. Exhibit B shows the proposed site plan.

The project is planned to open in 2025 and will be evaluated in one single phase.

**B. Project Trip Generation:** Trip generation represents the amount of traffic that is attracted and produced by a development. Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual.* The 2021 11$^{th}$ Edition ITE Manual has been utilized for this scoping agreement. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

The project is proposing to construct a 74,927 SF warehouse building and a truck stop facility with eight (8) vehicle fueling positions. As such, ITE land Use 150: Warehousing and ITE land use 950: Truck Stop trips rates are the most appropriate for these land uses.

ITE land use 150: Warehousing trip rates contain the following split percentages of passenger vehicles and trucks:

- AM Peak Hour – (88.2% passenger cars & 11.8 % trucks)
- PM Peak Hour – (83.3% passenger cars & 16.7 trucks)
- Weekday Daily – (64.9% passenger cars & 35.1% trucks)

Moreover, these truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix for "Without Cold Storage" uses: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

Table 1 shows the ITE trip generation rates (11th Edition) utilized for the trip generation analysis of the proposed project land use as well as the project's forecast peak hour and daily traffic volumes.

As shown in Table 1, based on the ITE trip generation rates and truck mix recommendations from SCAQMD, the proposed project is forecast to generate approximately 1,920 actual vehicle daily trips with 125 actual vehicle trips in the AM peak hour and 136 actual vehicle trips in the PM peak hour (i.e. no adjustments for truck traffic). After the application of appropriate passenger car equivalent (PCE) factors, the proposed project is forecast to generate approximately 5,376 daily PCE trips with 353 PCE trips in the AM peak hour and 385 PCE trips in the PM peak hour.

**C. Project Trip Distribution:** RK has identified the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, as one of the most recently performed traffic impact analysis studies. The I-15 Industrial Park project is located south of Main Street, north of Poplar Street, and adjacent to the proposed Cargo Solution Express Warehouse Project.

The proposed project shares similar land use types with the I-15 Industrial Park Project. As a result, the proposed project trip distribution has been developed to account for both passenger vehicles and trucks generated by the proposed project in a manner consistent with the trip distribution recommended in the Dudek study. The project trip distributions are presented in Exhibits C-1 and C-2 for passenger vehicles and Exhibits D-1 and D-2 for trucks.

**D. Study Intersections:** The analysis will evaluate the following seven (7) study intersections.

1. U.S. Route 395 (NS) at Main Street - Phelan Road (EW)
2. U.S. Route 395 (NS) at Poplar Street (EW)
3. Three Flags Avenue (NS) at Poplar Street (EW)

4. U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)
5. U.S. Route 395 (NS) at Joshua Street (EW)
6. I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)
7. I-15 Southbound On-Ramp (NS) at Joshua Street (EW)

**E. Analysis Scenarios:** The analysis will evaluate traffic conditions for the following scenarios during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak hour conditions:

- Existing Conditions;
- Project Opening Year (2025) Without Project Conditions;
- Project Opening Year (2025) With Project Conditions;
- Horizon Year (2040) Without Project Conditions; and
- Horizon Year (2040) With Project Conditions.

**F. Traffic Analysis Parameters:** The traffic analysis will be conducted utilizing Vistro analysis software and the Highway Capacity Manual 7$^{th}$ Edition (HCM 7) methodology.

All parameters will adhere to values identified in the *LOS Analysis Procedures and Assumptions* section of the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment,* dated July 2020.

**G. Existing Traffic Counts:** As previously mentioned, the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, is one of the most recently performed traffic impact analysis studies.

RK proposes to reference the 2021 peak hour traffic volumes displayed on Figure 17 of the Dudek report and apply a two percent (2%) annual growth rate for two (2) years to establish existing (2023) traffic volumes for the study intersections.

Figure 17 of the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, has been included in this scope of work in Attachment A for review.

**H. Forecast Project Opening Year (2025) Conditions Traffic Volumes:** RK proposes to reference the Opening Year (2024) peak hour traffic volumes shown in Figure 21 of the Dudek report and apply a two percent (2%) annual growth rate for one (1) year to establish Project Opening Year (2025) Conditions Traffic Volumes.

The volumes shown in Figure 21 of the Dudek report were estimated by adding traffic volumes generated by approved and pending projects (Figure 20) in the study area to the existing traffic volumes shown in Figure 17.

Figures 20 and 21 of the Dudek report are also included in Attachment A.

**I. Forecast Horizon Year (2040) Conditions Traffic Volumes:** Figure 23 of the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, illustrate Horizon Year (2040) traffic volumes.

Dudek provides the following methodology for developing the Horizon Year (2040) traffic volumes:

> "General Plan buildout traffic volumes were developed using the current SBTAM for the horizon year 2040. All model output volumes were provided by a County-approved modeler (Translutions), and post-processed and balanced for conservation of flow throughout the network…The existing intersection configurations… have been assumed to be preserved under the Horizon Year (2040) conditions. Adjustments to the peak hour factor and turning movement capacities have been made in per the City of Hesperia TIA Guidelines."

RK proposes to reference Figure 23 of the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, based on the above methodology and to ensure traffic data consistency.

Figure 23 of the *Transportation Impact Analysis I-15 Industrial Park Project City of Hesperia,* dated October 2022, prepared by Dudek, has also been included in Attachment A for review.

**J. VMT Analysis:** A vehicle miles traveled (VMT) analysis has been previously prepared by *IBI Group* in the *Cargo Solution Express Truck Warehouse VMT/LOS Analysis Memorandum,* dated September 7, 2022. As such, the traffic analysis report will not include a detailed discussion on VMT but will reference the findings of the memorandum. The *Cargo Solution Express Truck Warehouse VMT/LOS Analysis Memorandum*, prepared by IBI Group, is included in Attachment B.

**K. Site Access and Circulation Analysis:** WB-67 truck turning templates will be generated at the proposed access driveways used for Truck entry/exit to determine the adequacy of curb radii, driveway throat widths, and street widths along Poplar Street and Mesa Linda Street.

A qualitative review of the on-site circulation will also be performed to determine potential conflicts of truck maneuvers throughout the site.

**L. Intersection Queuing Analysis:** RK will perform a queueing analysis utilizing the HCM 95th percentile queue evaluation methodology for all study intersections/movements. The study will evaluate any potential spillover from turn pockets into through lanes or into adjacent intersections.

**M. Performance Criteria:** Implementation Policy CI-2.1 of the City of Hesperia City-wide Congestion Management Plan (CMP) is for the City of Hesperia to strive and achieve and maintain a LOS D or better on all roadways and intersections: LOS E during peak hours shall be considered acceptable through freeway interchanges and major corridors (Bear Valley Road, Main Street/Phelan Road, Highway 395).

**N. Mitigation Measures:** If an intersection is operating deficiently, improvements shall be identified to improve intersection operations to acceptable levels of service (LOS D or better).

**O. Request for Information:** Please provide information on the following for use in the traffic study:

- Information on cumulative projects that need to be included in the traffic analysis (location, land use type(s), and land use quantities); and

- Information on future roadway and circulation system modifications/improvements that are planned within the study area and would potentially affect the analysis.

If you have any questions, or would like further review, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.



Justin Tucker, P.E.
Principal Engineer

Attachments

Approved by:

_____

City of Hesperia

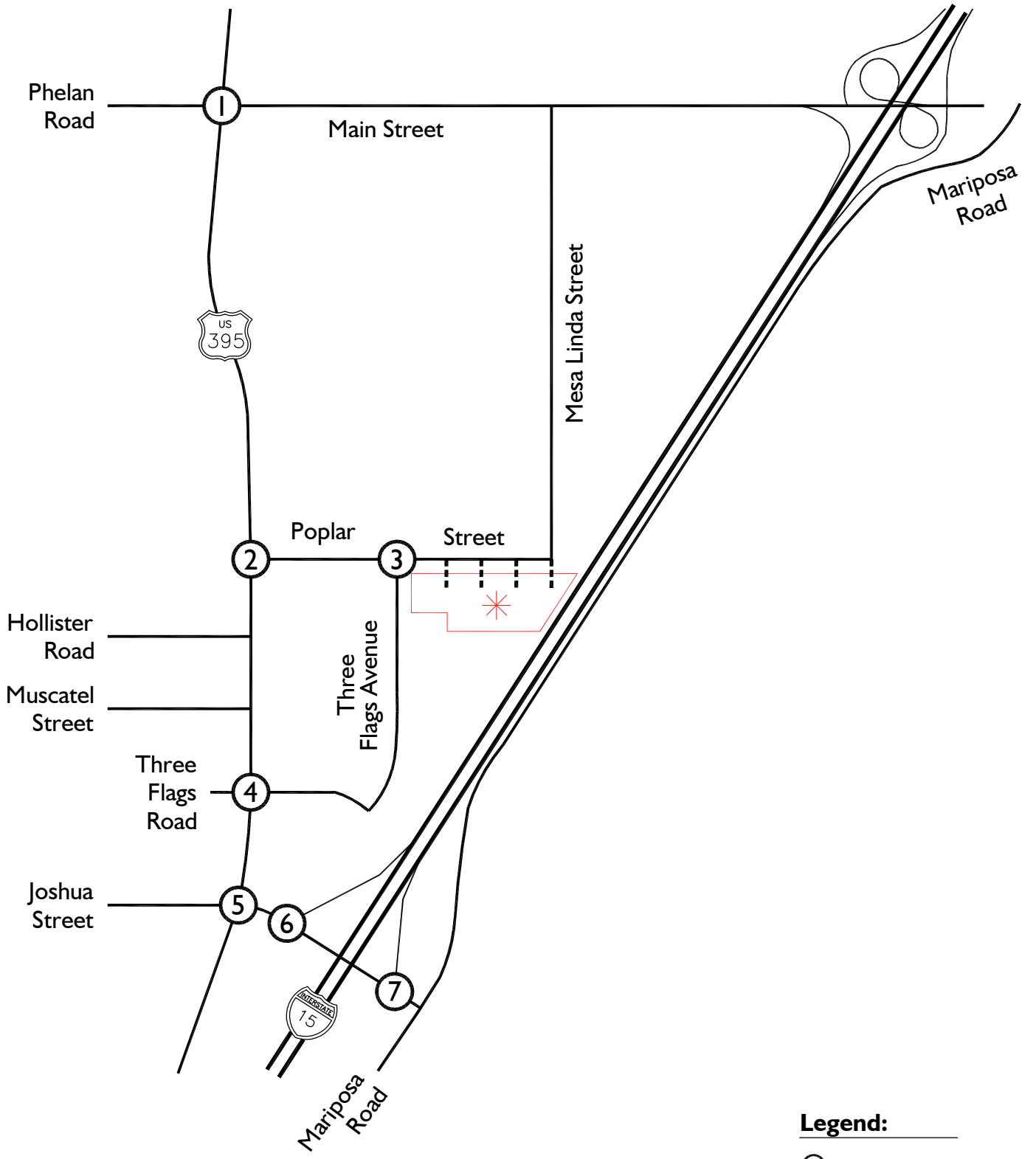
_____

Date

# Attachments

Exhibit A

# Location Map




**Legend:**

- (1) = Study Area Intersection
- ✳ = Project Site
- = Project Access Driveway
- = Project Site Boundary

N

Exhibit B

# Site Plan

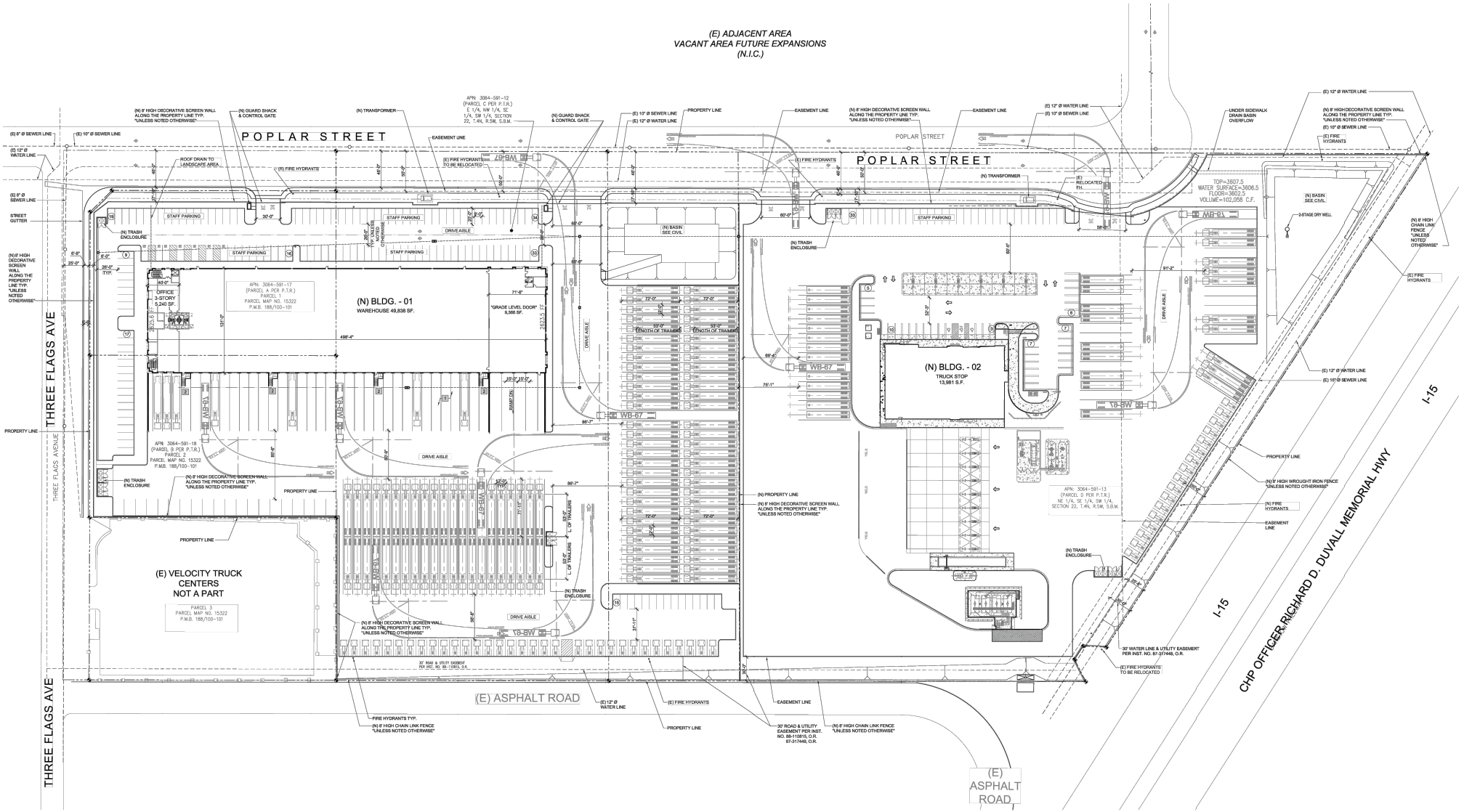
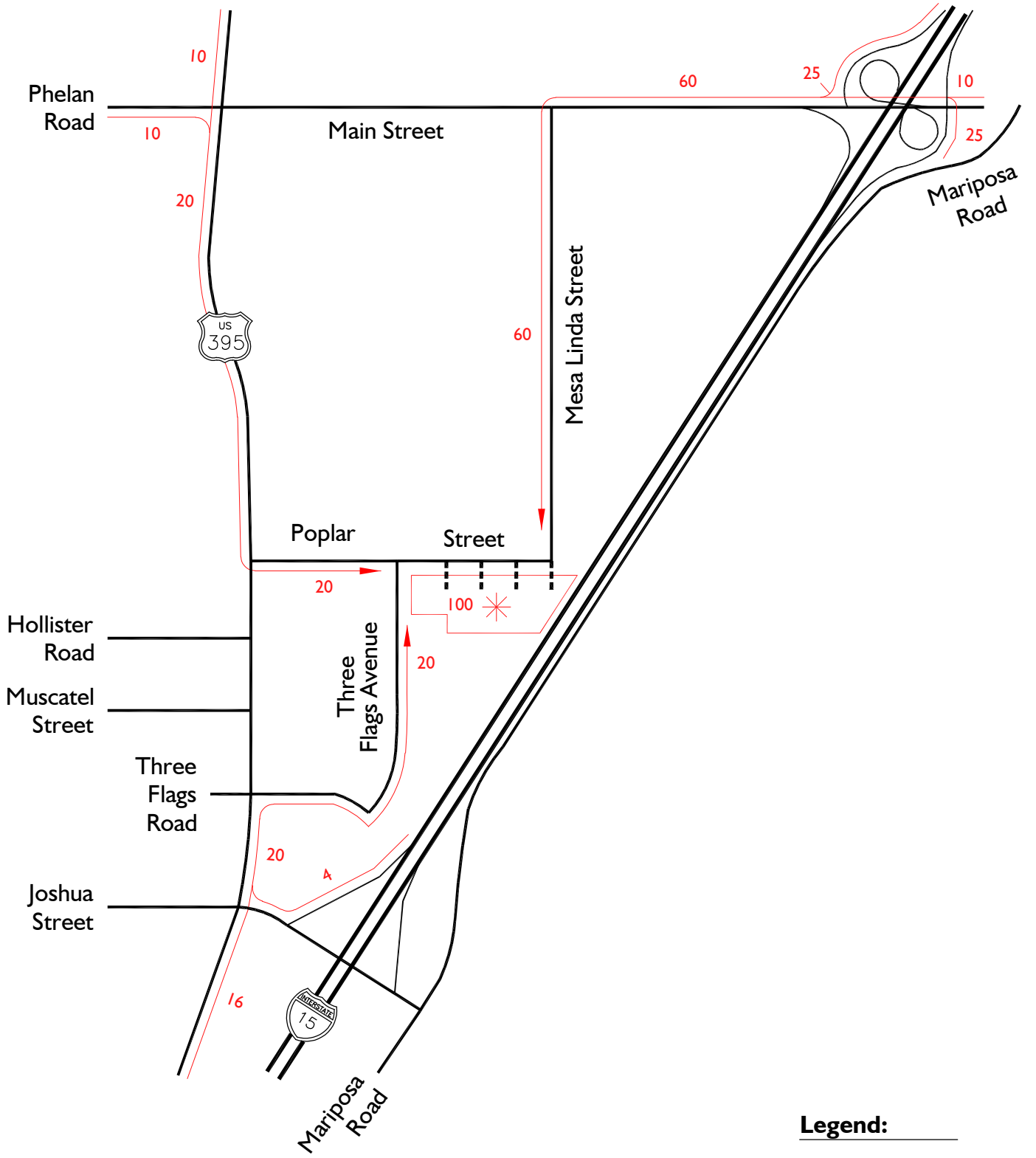


Exhibit C-1

# Inbound Project Trip Distribution
# Passenger Vehicles




**Legend:**

10 = Percent to Project

✳ = Project Site

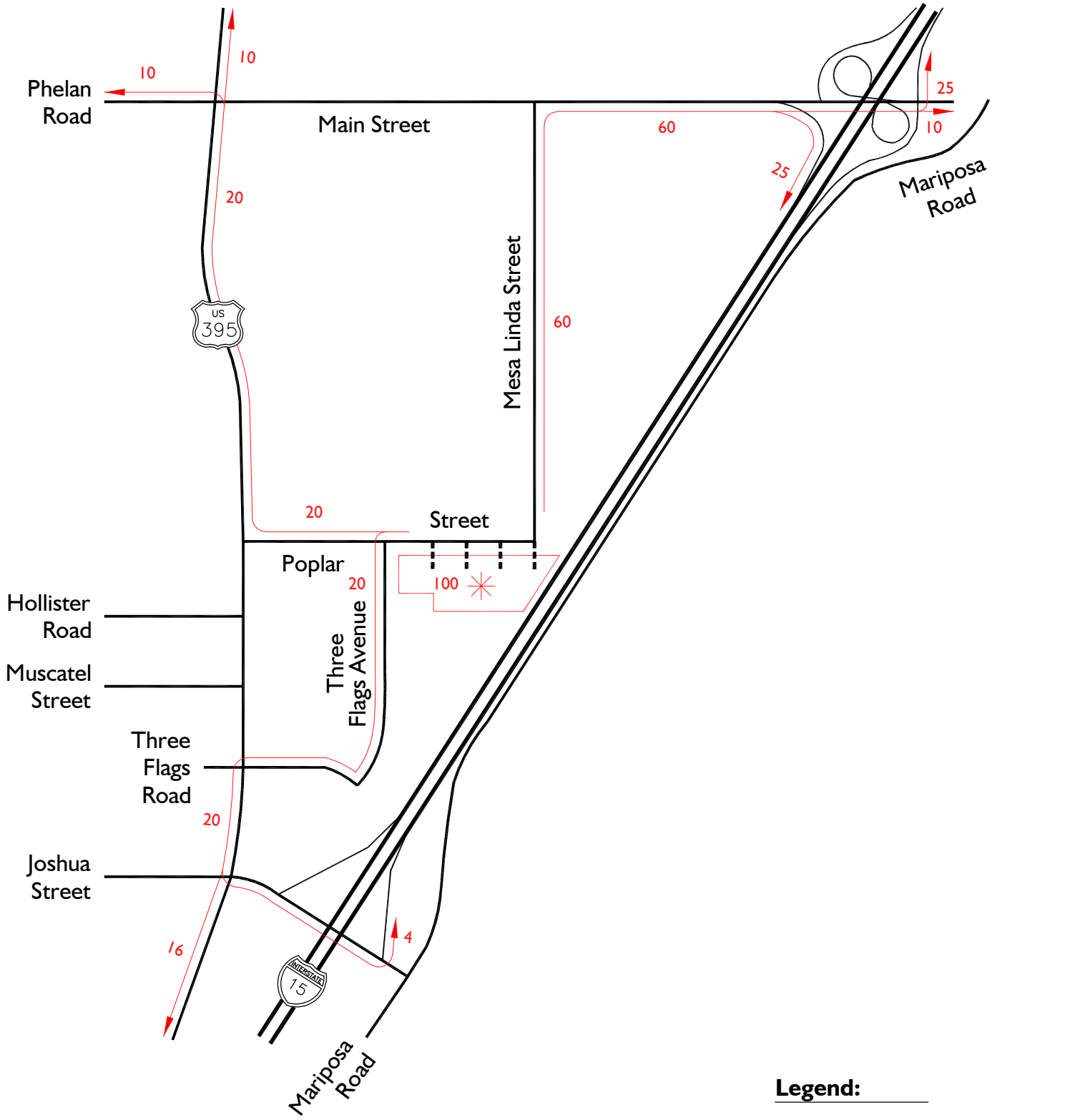
--- = Project Access Driveway

— = Project Site Boundary

N

Exhibit C-2

# Outbound Project Trip Distribution
# Passenger Vehicles




**Legend:**

10 = Percent from Project

✳ = Project Site

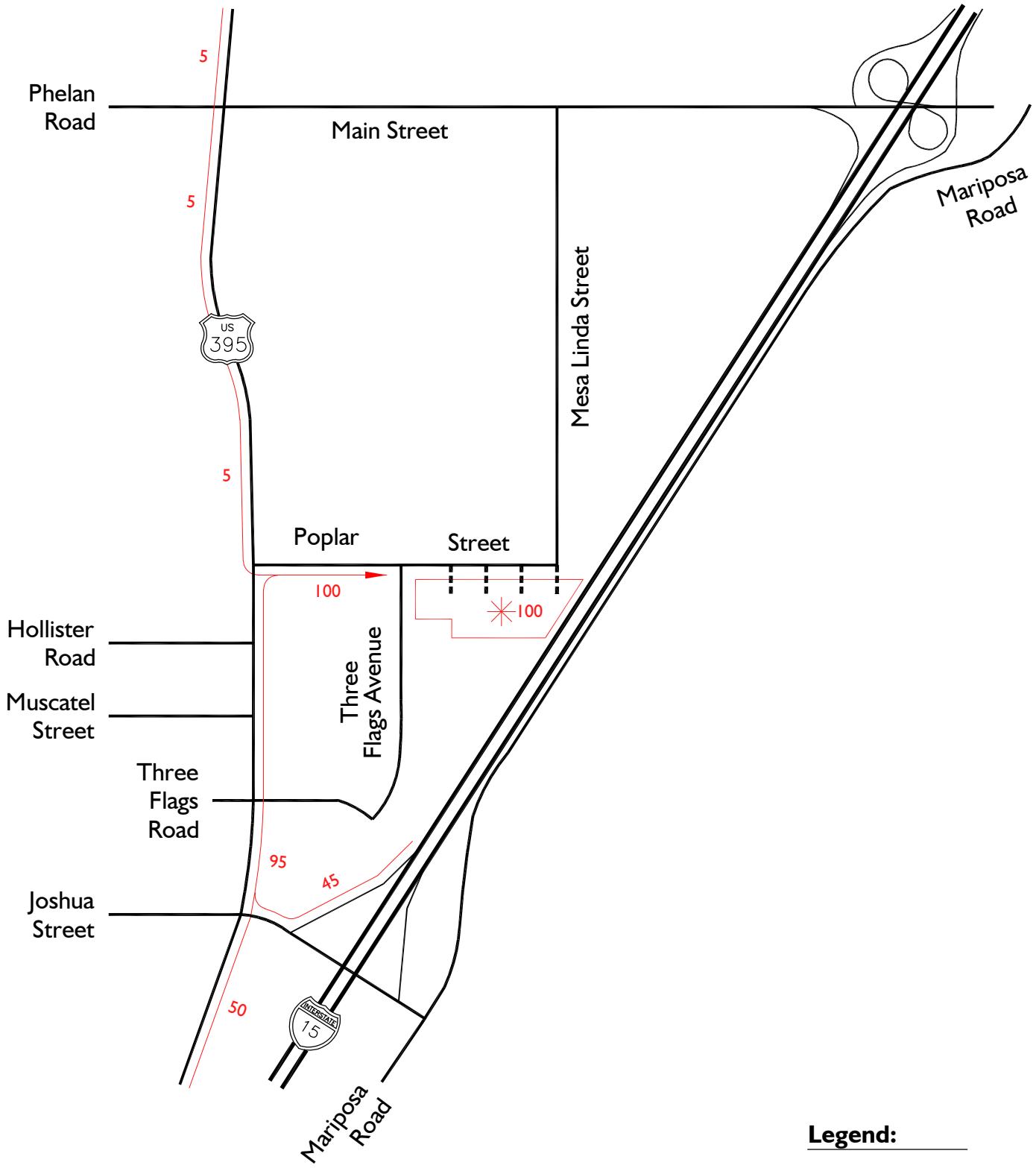
▬ = Project Access Driveway

— = Project Site Boundary

N

Exhibit D-1

# Inbound Project Trip Distribution
# Trucks




**Legend:**

10 = Percent to Project

✳ = Project Site

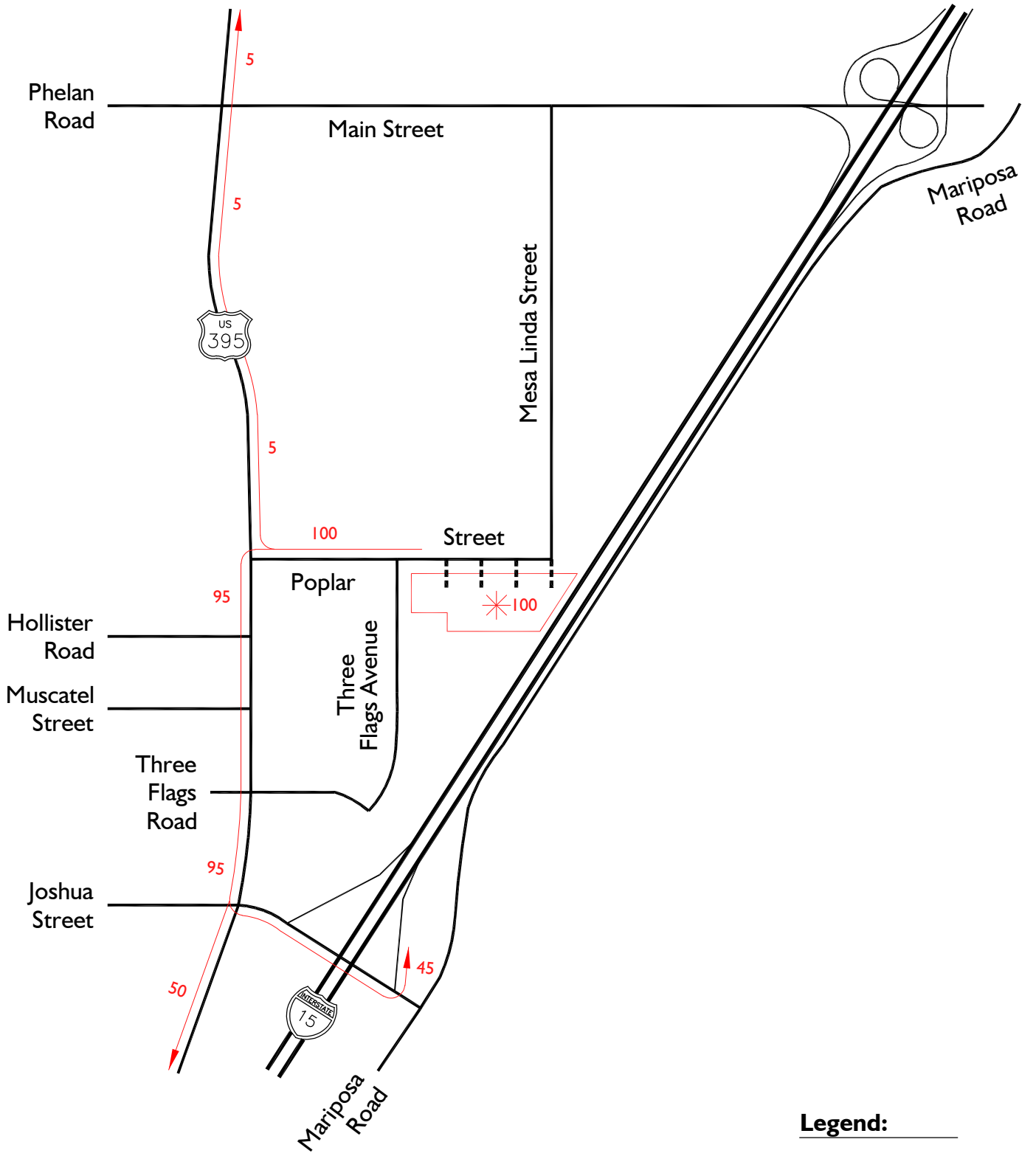
▬ = Project Access Driveway

— = Project Site Boundary

N

Exhibit D-2

# Outbound Project Trip Distribution
# Trucks




**Legend:**

10 = Percent from Project

✳ = Project Site

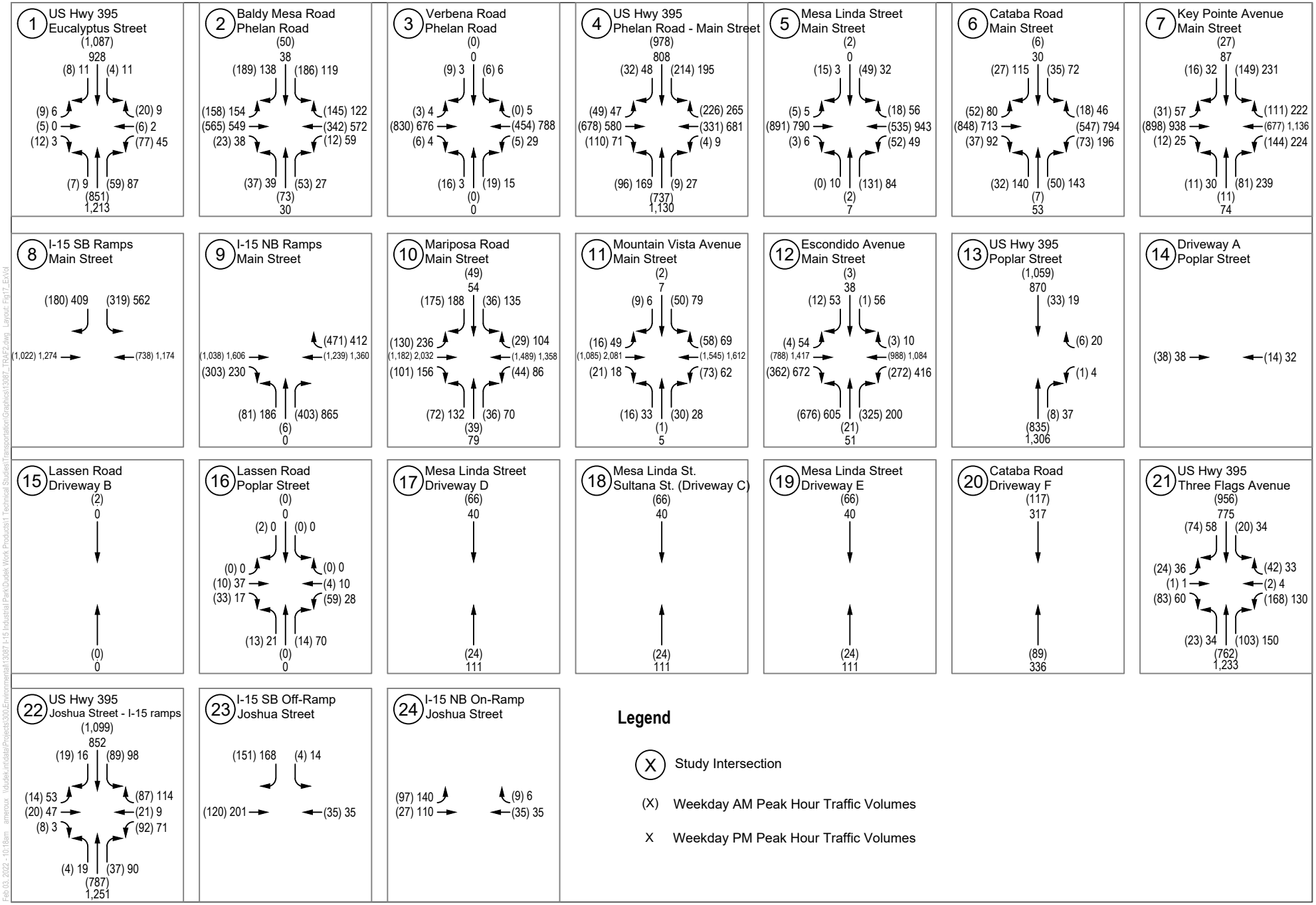
▬ = Project Access Driveway

— = Project Site Boundary

N

# Attachment A

Excerpts from the *Transportation Impact Analysis*
*I-15 Industrial Park Project City of Hesperia, Prepared by Dudek, October 2022*




SOURCE: AIM 2020; Counts Unlimited 2019/2021

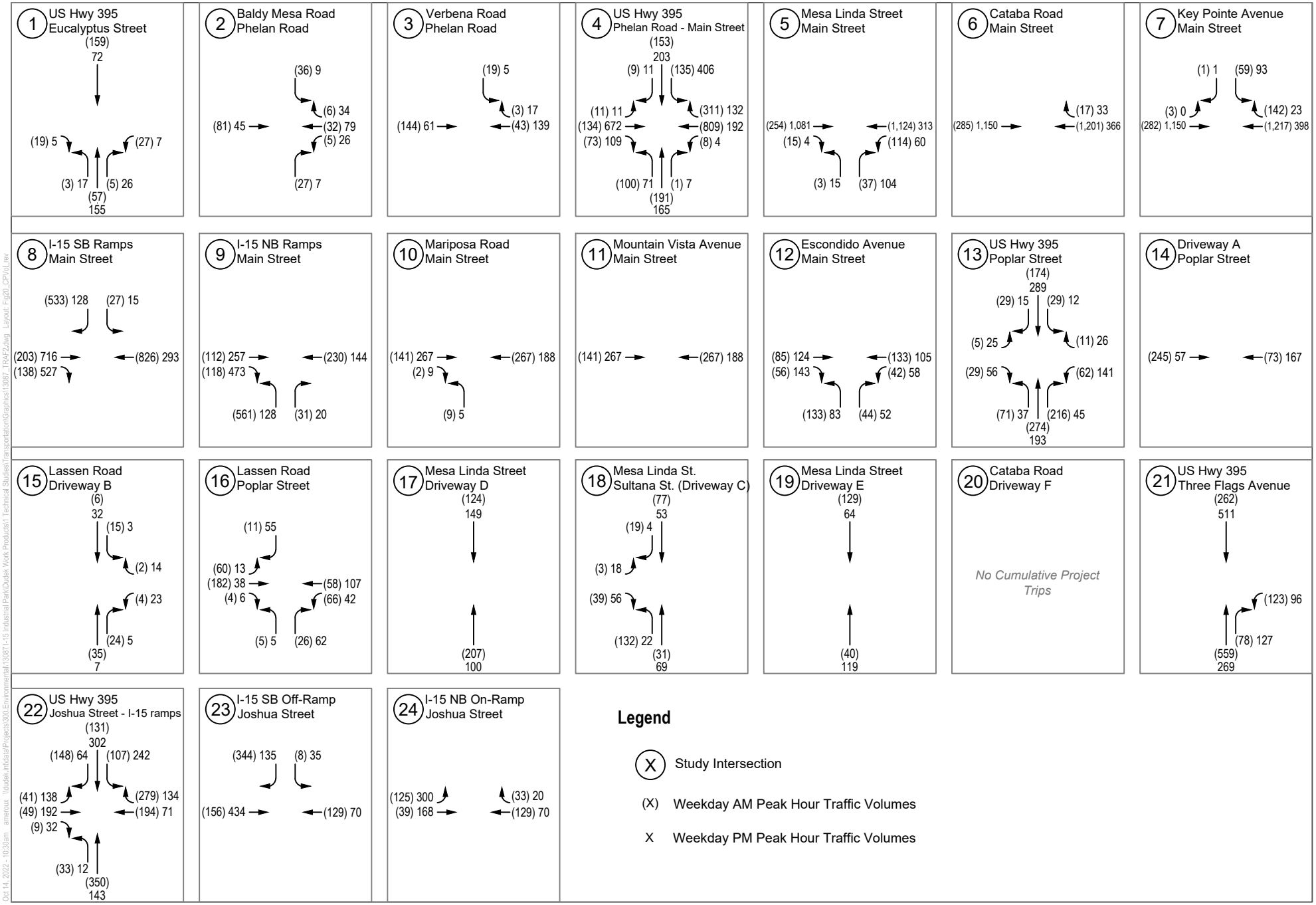
**FIGURE 17**

DUDEK NOT TO SCALE

Existing Peak Hour Traffic Volumes (PCE)

I-15 Industrial Park

Feb 03, 2022 - 10:18am amerioux \\dudek.int\data\Projects\300_Environmental\13087 I-15 Industrial Park\Dudek Work Products\1 Technical Studies\Transportation\Graphics\13087_TRAF2.dwg Layout: Fig17_ExVol



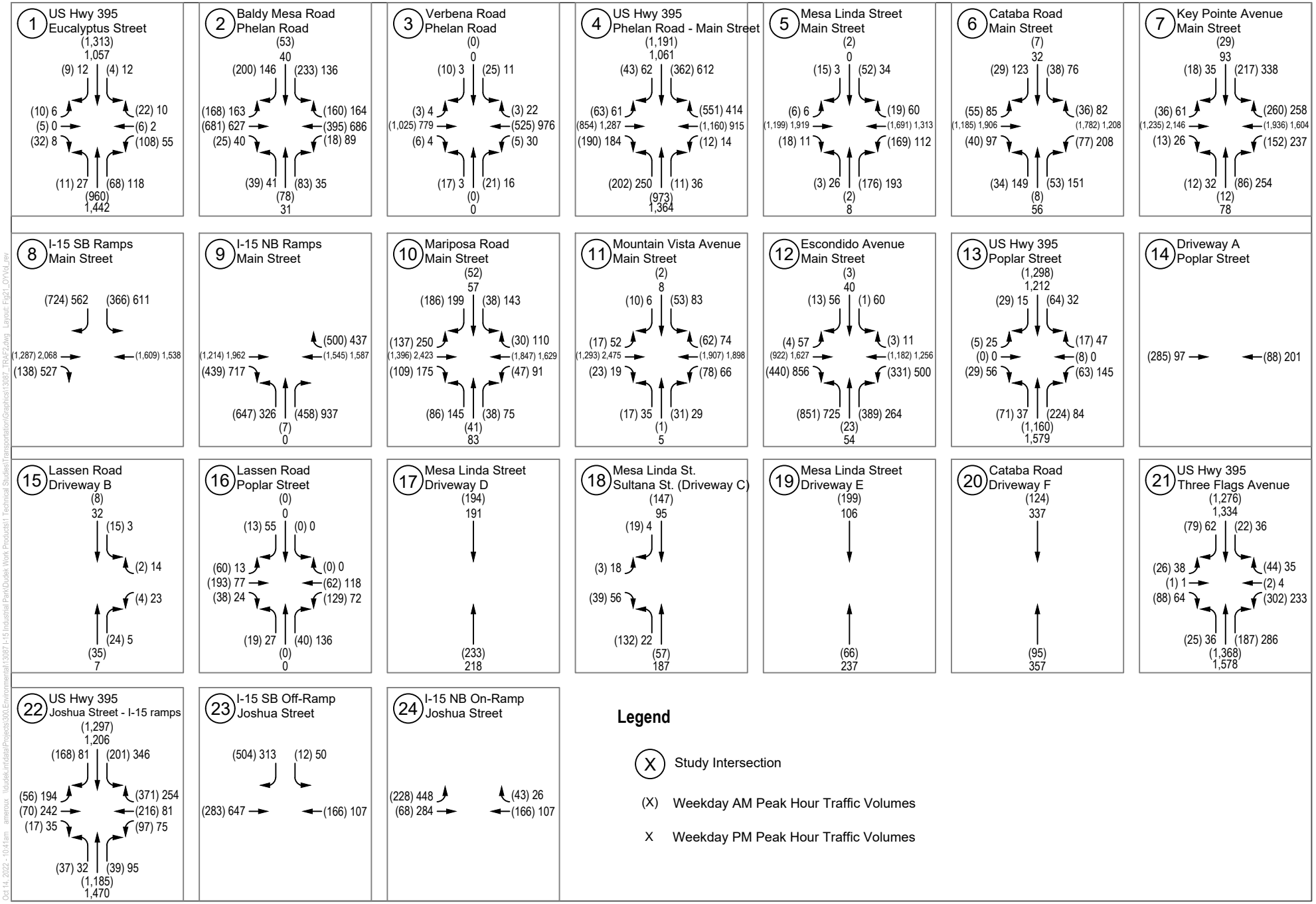

SOURCE: City of Hesperia 2022

**FIGURE 20**

DUDEK NOT TO SCALE

Cumulative Projects Peak Hour Traffic Volumes (PCE)

I-15 Industrial Park




SOURCE: AIM 2020; Counts Unlimited 2019/2021

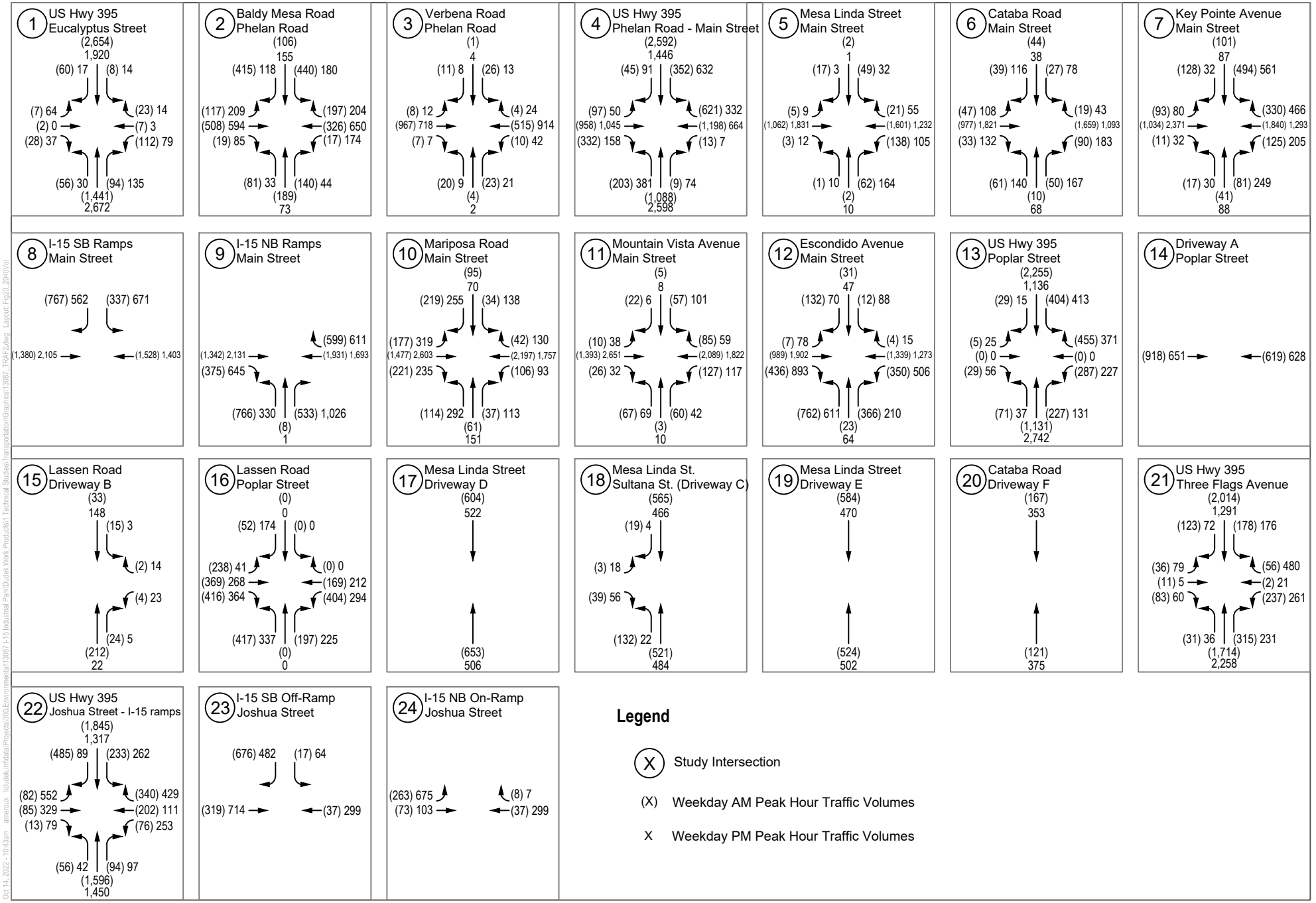
**FIGURE 21**

DUDEK NOT TO SCALE

Opening Year (2024) Peak Hour Traffic Volumes (PCE)

I-15 Industrial Park

Oct 14, 2022 - 10:41am amercux \\dudek.int\data\Projects\300_Environmental\13087 I-15 Industrial Park\Dudek Work Products\1 Technical Studies\Transportation\Graphics\13087_TRAF2.dwg Layout: Fig21_OYVol_rev




SOURCE: Translations 2021

**FIGURE 23**

DUDEK

NOT TO SCALE

Horizon Year (2040) Peak Hour Traffic Volumes (PCE)

I-15 Industrial Park

Oct 14, 2022 - 10:43am ameroux \\dudek.int\data\Projects\300_Environmental\13087 I-15 Industrial Park\Dudek Work Products\1 Technical Studies\Transportation\Graphics\13087_TRAF2.dwg Layout: Fig23_2040(Vol

# Attachment B

*Cargo Solution Express Truck Warehouse VMT/LOS Analysis Memorandum, Prepared by IBI Group, September 2022*

**IBI GROUP**
18401 Von Karman Avenue – Suite 300
Irvine CA 92612 USA
tel 949 833 5588 fax 949 833 5511
**ibigroup.com**



# Memorandum

| | | | |
|---|---|---|---|
| **To/Attention** | Victor Paitimusa, UltraSystems | **Date** | September 7, 2022 |
| **From** | Mike Arizabal, IBI Group | **Project No** | 1450574 |
| **cc** | | | |
| **Subject** | Cargo Solutions Express Truck Warehouse VMT/LOS Analysis | | |

IBI Group has been retained to prepare a VMT/LOS Analysis for the proposed Cargo Solutions Express Truck Warehouse in the City of Hesperia, CA. The City of Hesperia defers to the San Bernardino County Transportation Authority's (SBCTA) *Recommended Traffic Impact Guidelines for Vehicle Miles Traveled and Level of Service Assessment* (February 2020). As such, the VMT analysis was prepared to be consistent with SBCTA's approach to VMT and LOS analysis. This technical memorandum includes a description of the project, as well a four-step analytical VMT process: Evaluate Land Use Type, Screen for Non-Significant Transportation Impact, Identify Significance Measure and Threshold, and VMT Analysis for Non-Screened Development. The memorandum also includes a focused traffic impact analysis.

## PROJECT DESCRIPTION

The property, owned by Cargo Solutions Express Inc., is encompassed by Poplar Street in the north, Three Flags Avenue in the west, I-15 Freeway in the east, and E Asphalt Road to the south. An existing truck repair shop is located immediately southwest of the proposed site, with other miscellaneous trucking and industrial uses to the west and south. The project is proposing four (4) new driveways, all located along Poplar Street. No access is proposed on Three Flags Avenue.

The City's General Plan Land Use and zoning designation for the project site is General Manufacturing (I2) (City of Hesperia, 2020; City of Hesperia, 2010). The City's General Plan allows I2 designated areas to be developed with the heaviest types of manufacturing and industrial uses with approval of a site plan or conditional use permit. Manufacturing, warehousing, and fabrication uses are all appropriate for this designation (City of Hesperia, 2019, p. LU-49).

The project proposes to construct three (3) buildings for a total gross floor area of 150,623 square feet (sf):

- Building 1 – 60,044 sf warehouse and 15,720 sf office
- Building 2 – 49,915 sf warehouse and 15,720 sf office
- Building 3 – 9,224 sf drive-thru truck wash

## BACKGROUND

The updated California Environmental Quality Act (CEQA) Guidelines, which were adopted in December 2018, went into effect on July 1, 2020. These updated guidelines require all lead agencies to adopt VMT as the new measure for identifying transportation impacts for land use projects. VMT has been adopted as the new measure, in place of the previous metric of automobile delay-based level of service (LOS). Further information on the updated guidelines is available in

the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), released by the Governor's Office of Planning and Research (OPR). The San Bernardino County Transportation Authority (SBCTA) also developed a *Recommended Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment (SBCTA Guidelines)* in July 2019, which has been used to develop the VMT screening evaluation.

## PROJECT SCREENING

For the purposes of SB 743 compliance, a VMT analysis should be conducted for land use projects and would apply to projects that have the potential to increase the average VMT per service population compared to the County's boundary. The SBCTA SB 743 Guidelines provides details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than significant impact without conducting a more detailed analysis.

Screening thresholds are broken into the following categories:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

A land use project need only meet one of the above screening thresholds to result in a less-than-significant impact.

### *Transit Priority Area (TPA) Screening*

Projects located within a Transit Priority Area (TPA), or a half mile area around an existing "major transit stop"[1] or an existing stop along a "high quality transit corridor"[2], may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may not be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes more parking for use by residents, customers, or employees of the project than required by the City requirements;
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
4. Replaces affordable residential units with a smaller number of moderate or high-income residential units.

Based on the Screening Tool results presented in Attachment A, the Project site is not located within ½ mile of an existing major transit stop, or along a high-quality transit corridor.

**The TPA screening criteria are not met.**

---

[1] Pub. Resources Code, § 21064.3 - 'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

## *Low VMT Area Screening*

As noted in the SBCTA Guidelines, "Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may quality for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area"[3]. The Screening Tool uses the sub-regional San Bernardino County Transportation Analysis Model (SBTAM) to measure VMT performance within San Bernardino County for individual traffic analysis zones (TAZ's) within each city.

The Project's physical location was inputted into the SBCTA Screening Tool to determine the VMT generated within the respective TAZ as compared to the jurisdictional average inclusive of a particular threshold (e.g., baseline project-generated VMT per service population below the County's baseline VMT per service population). As the project is strictly an industrial use space, the VMT metric "PA VMT Per Worker" was selected. The results are displayed in Attachment A, which indicate that the Project is located within a low VMT area.

**The Low VMT Area screening criterion is met.**

## *Low Project Type Screening*

The SBCTA Guidelines identify that local serving retail projects with less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail include the following:

- Supermarket
- Restaurant/café/bar
- Coffee/donut shop
- Dry cleaners
- Barbershop
- Hair/nails salon
- Walk-in medical clinic
- Urgent care
- Auto repair/tire shop
- Gyms/health club
- Dance/yoga/fitness/material arts studio

In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature[4]:

[3] SBCTA Guidelines, Page 26.
[4] SBCTA Guidelines, Page 27.

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving gas stations
- Local-serving banks
- Local-serving hotels (e.g., non-destination hotels)
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- Projects generating less than 110 daily vehicle trips[5]
    - This generally corresponds to the following "typical" development potentials:
        - 11 single family housing units
        - 16 multifamily, condominiums, or townhouse housing units
        - 10,000 sf of office
        - 15,000 sf of light industrial[6]
        - 63,000 sf of warehousing
        - 79,000 sf of high cube transload and short-term storage warehouse

**The Low Project Type screening criteria are not met.**

[5] 2 This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

[6] Threshold may be higher depending on the tenant and the use of the site. This number was estimated using rates from ITE's Trip Generation Manual.

### *VMT Assessment for Non-Screened Development*

Since the proposed project was screened through one of the steps above (Low VMT Area Screening), a VMT analysis is not needed, and the project is not assumed to have a significant VMT impact.

### *Traffic Analysis*

Per SBCTA Guidelines, a traffic analysis is required when local criteria and thresholds indicate they are necessary. However, the traffic analysis must be prepared to satisfy CMP requirements, except as noted below, when a proposed change in land use, development project, or at local discretion, a group of projects are forecast to equal or exceed the CMP threshold of 250 two-way peak hour trips generated, based on trip generation rates published for the applicable use or uses in the Institute of Transportation Engineers' Trip Generation or other CMA-approved data source. Pass-by trips shall not be considered in the threshold determination. However, industrial, warehousing and truck projects shall convert trucks to PCE's (or appropriately adjust the capacity assessment to reflect the increase in heavy vehicles) before applying the threshold. The closest CMP facility is Phelan Road-Main Street, located three-quarters of a mile north of the project site.

For State Highways, any project expected to generate 100 to 250 peak hour trips and is anticipated to add at least 50 peak hour trips to a State facility (i.e., I-15) would be required to prepare a traffic analysis for Caltrans review.

Table 1 below summarizes the trip generation for the proposed project, with trip rates referenced from the Institute of Transportation Engineers' *Trip Generation Manual* (11th Edition, 2021), vehicle mix from the industry-approved City of Fontana/County of San Bernardino *Truck Trip Generation Study* (Heavy Industrial), and passenger car-equivalent (PCE) factors obtained from SBCTA Guidelines.

**Table1: Project Trip Generation**

| | Unit | ADT | A.M. Peak Hour | | | P.M. Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| **Trip Rates[1] (Land Use Code)** | | | | | | | | |
| Warehousing (150) | TSF | 1.71 | 0.13 | 0.04 | 0.17 | 0.05 | 0.13 | 0.18 |
| **Project Trip Generation** | **Size** | | | | | | | |
| Cargo Express Solutions Warehouse | 150.623 | 258 | 20 | 6 | 26 | 8 | 20 | 27 |
| ***Total Project Trip Generation (PCEs)[2]*** | | ***401*** | ***31*** | ***9*** | ***40*** | ***12*** | ***31*** | ***42*** |

Notes: TSF - thousand square feet; DU - dwelling unit; ADT - average daily traffic

[1]Trip rates referenced from the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition (2021).

[2]PCEs = passenger car equivalents: vehicle mix obtained from City of Fontana Truck Trip Generation Study for Industrial uses:

Total trip generation = 61.2% passenger vehicles, 6.1% 2-axle trucks, 12.7% 3 axle trucks, and 19.9 4+axle trucks

PCEs: 2-axle = 1.5, 3-axle = 2.0, 4+axle = 3.0

Based on the trip generation in Table 1, the proposed project would not exceed any of the peak hour trip thresholds noted above (250 two-way peak hour trips for CMP facilities or 100 to 250 peak hour trips for State Highways). Therefore, a traffic analysis would not be required for the proposed project.

## *On-Site Circulation*

The site plan, shown in Attachment B, was reviewed to determine the adequacy of all project driveways, to identify any issues related to on-site circulation, and to identify any safety concerns.

Four project access driveways are proposed as part of the project, all located along Poplar Street east of Three Flags Avenue. The two driveways closest to Three Flags Avenue are dedicated for employee and automobile access. The remaining two driveways are dedicated for truck movements. Turning templates are provided for the WB-67 design vehicle (semi-trucks with a 53-foot trailer). Trucks turning into and out of the two eastern project driveways, as well as negiotiating through the site and into/out of parking stalls/bays was determined to be adequate based on all possible movements.

## *Parking*

A parking analysis to determine off-street minimum parking requirements was conducted using rates from the City of Hesperia Municipal Code 16.20.080 Parking Requirements and is shown below.

| LAND USE/ REQUIREMENT | PARKING RATE | BLDG. SIZE/ RATE | REQUIRED | PROVIDED |
|---|---|---|---|---|
| **BUILDING - 01** WAREHOUSE (61,223 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. | 10,000 S.F. (20 SPACE) | 41 | 209 |
| | 0.4/1000 FOR AREA AFTER 10,000 | 50,678 S.F. (21 SPACE) | | |
| OFFICE | 1 SPACE / 200 S.F. | 15,720 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 01*** | ***120*** | |
| **BUILDING - 02** WAREHOUSE (49,915 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. | 10,000 S.F. (20 SPACE) | 38 | 118 |
| | 0.4/1000 FOR AREA AFTER 10,000 | 39,915 S.F. (16 SPACE) | | |
| OFFICE | 1 SPACE / 200 S.F. | 15,720 S.F. | 79 | |
| | | ***TOTAL PARKING REQ'D. FOR BLDG. 02*** | ***115*** | |
| **BUILDING - 03** WAREHOUSE (9,224 S.F.) | 20 SPACE FOR THE FIRST 10,000 S.F. | 10,000 S.F. (20 SPACE) | ***20*** | 27 |

TOTAL OVERALL PARKING REQUIRED: ***255 SPACES***
TOTAL PARKING PROVIDED: STANDARD PARKING ***354 SPACES***
INCLUDING H/C PARKING 12 SPACES

As shown above, the number of parking spaces proposed is higher than the minimum number of spaces required per City Code.

## *Conclusion*

The SBCTA SB 743 Guidelines provides details on appropriate “screening thresholds” that can be used to identify when a proposed land use project is anticipated to result in a less-than significant impact without conducting a more detailed analysis. The project was screened through the following categories:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

A land use project need only meet one of the above screening thresholds to result in a less-than-significant impact. **The project meets the criteria for the Low VMT Area Screening and therefore is considered to have a less-than-significant impact to VMT.**

Per SBCTA Guidelines, a traffic analysis is required when local criteria and thresholds indicate they are necessary. These thresholds include 250 two-way peak hour trips on CMP facilities or 100-200 two-way peak hour trips on State facilities. The project is forecast to generate approximately 40 AM peak hour trips and 42 PM peak hour trips. **As such, the project does not meet the criteria for the preparation of a traffic analysis and is considered to have a less-than-significant impact to LOS.**

The site plan was reviewed to determine the adequacy of the project driveways and internal driveways to accommodate movements from automobiles and trucks. No issues were identified. The proposed parking provision was compared to the minimum parking requirements and has been determined that the project will exceed the minimum parking requirement.

If you have any questions or comments, please do not hesitate to email me at mike.arizabal@ibigroup.com.

Thank you,



Mike Arizabal
Senior Transportation Planner
IBI Group

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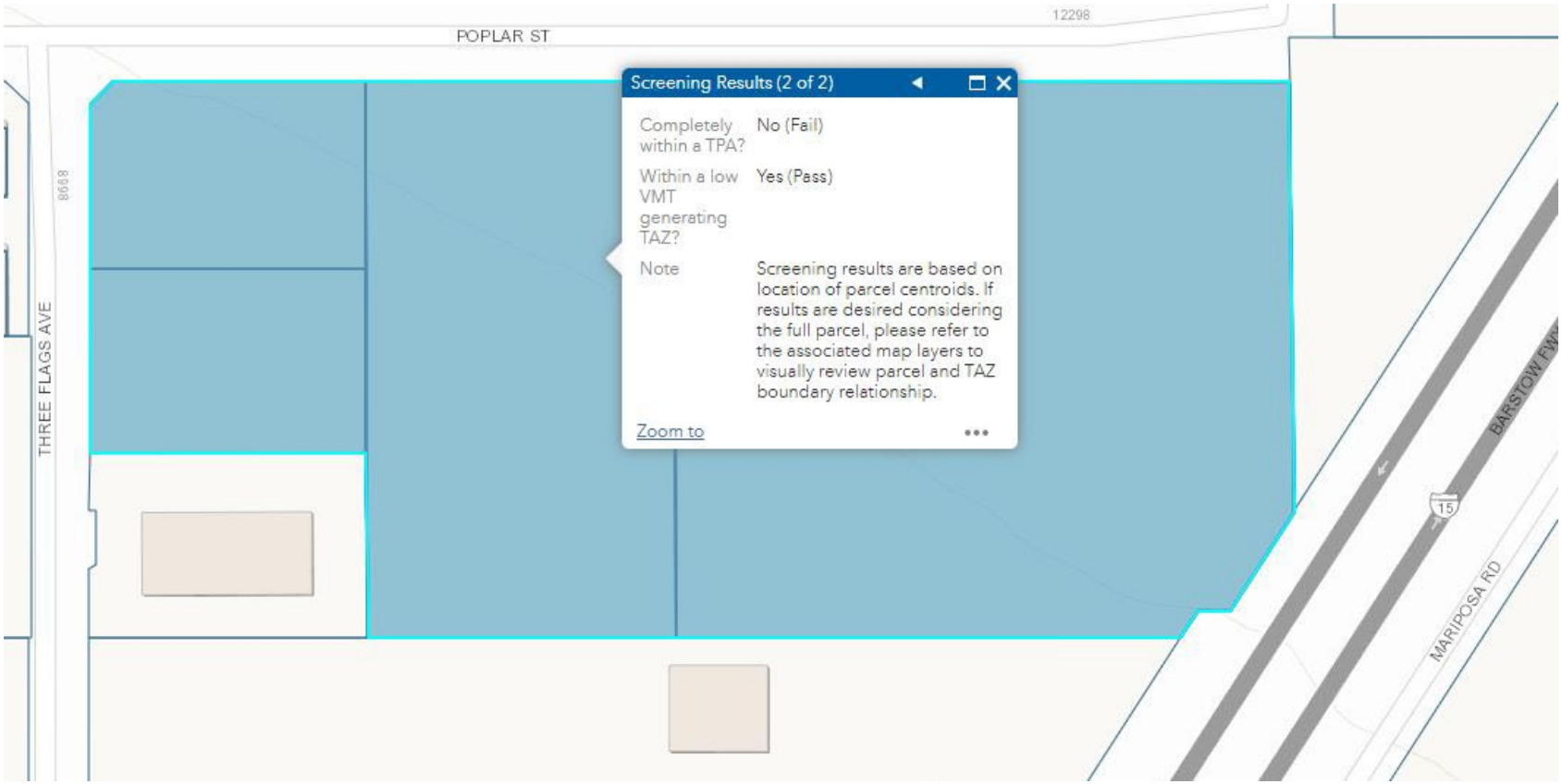


## ATTACHMENT A

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## SBCTA VMT Screening Tool



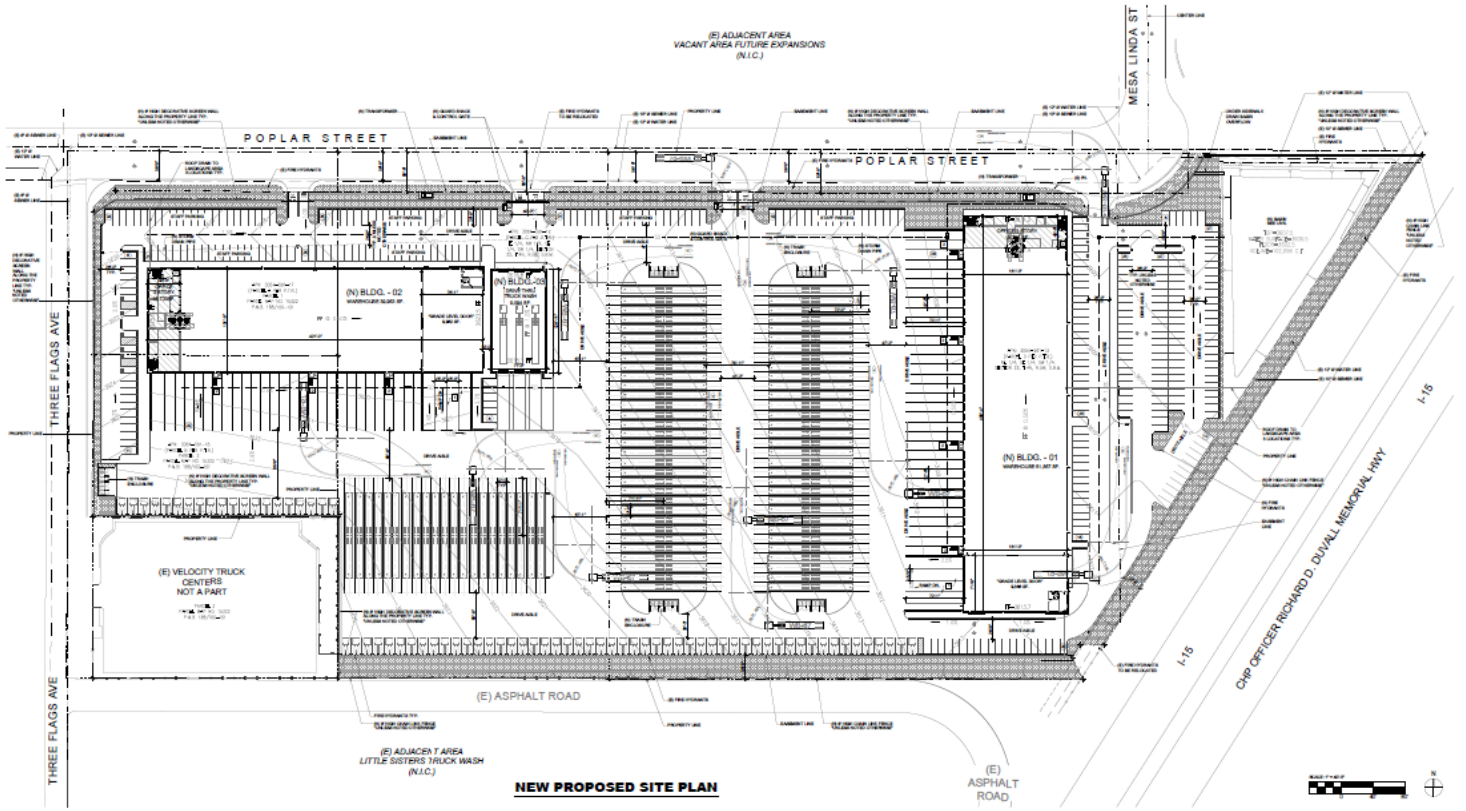
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**Attachment B**

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LEGAL DESCRIPTION

KEY NOTES

TOPO KEY NOTES

BUILDINGS FLOOR AREA PROPOSED

PARKING SUMMARY

SITE PLAN LEGEND

BUILDING INFORMATION

VICINITY MAP



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# Appendix B

Detailed CA MUTCD

Traffic Signal Warrant

Analysis Worksheets

RK19177.5
JN:1219-2023-03

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | S | N | E |
| 1 | 893 | 957 | 7 |
| 2 | 866 | 928 | 7 |
| 3 | 848 | 909 | 7 |
| 4 | 795 | 852 | 6 |
| 5 | 705 | 756 | 6 |
| 6 | 697 | 746 | 5 |
| 7 | 688 | 737 | 5 |
| 8 | 625 | 670 | 5 |
| 9 | 616 | 660 | 5 |
| 10 | 607 | 651 | 5 |
| 11 | 527 | 565 | 4 |
| 12 | 491 | 526 | 4 |
| 13 | 482 | 517 | 4 |
| 14 | 357 | 383 | 3 |
| 15 | 357 | 383 | 3 |
| 16 | 250 | 268 | 2 |
| 17 | 143 | 153 | 1 |
| 18 | 143 | 153 | 1 |
| 19 | 80 | 86 | 1 |
| 20 | 45 | 48 | 0 |
| 21 | 27 | 29 | 0 |
| 22 | 9 | 10 | 0 |
| 23 | 9 | 10 | 0 |
| 24 | 9 | 10 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 2 | 1850 | 2 | 7 | No | No | No | No | No | No | No | No | No | No |
| 2 | 2 | 1794 | 2 | 7 | No | No | No | No | No | No | No | No | No | No |
| 3 | 2 | 1757 | 2 | 7 | No | No | No | No | No | No | No | No | No | No |
| 4 | 2 | 1647 | 2 | 6 | No | No | No | No | No | No | No | No | No | No |
| 5 | 2 | 1461 | 2 | 6 | No | No | No | No | No | No | No | No | No | No |
| 6 | 2 | 1443 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 7 | 2 | 1425 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 8 | 2 | 1295 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 9 | 2 | 1276 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 10 | 2 | 1258 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 11 | 2 | 1092 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 12 | 2 | 1017 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 13 | 2 | 999 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 14 | 2 | 740 | 2 | 3 | No | No | No | No | No | No | No | No | No | No |
| 15 | 2 | 740 | 2 | 3 | No | No | No | No | No | No | No | No | No | No |
| 16 | 2 | 518 | 2 | 2 | No | No | No | No | No | No | No | No | No | No |
| 17 | 2 | 296 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 18 | 2 | 296 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 19 | 2 | 166 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 20 | 2 | 93 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 21 | 2 | 56 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 22 | 2 | 19 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 23 | 2 | 19 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 24 | 2 | 19 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Warrant 3 Condition A

| | |
|---|---|
| Orientation | E |
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 16.2 |
| Number of Lanes on Minor Street Approach | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:01 |
| Delay Condition Met | No |
| Volume on Minor Street Approach During Same Hour | 7 |
| High Minor Volume Condition Met | No |
| Total Entering Volume on All Approaches During Same Hour | 1857 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | Yes |
| Warrant Met for Approach | No |
| **Warrant Met for Intersection** | **No** |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | E | W | S |
| 1 | 67 | 46 | 29 |
| 2 | 65 | 45 | 28 |
| 3 | 64 | 44 | 28 |
| 4 | 60 | 41 | 26 |
| 5 | 53 | 36 | 23 |
| 6 | 52 | 36 | 23 |
| 7 | 52 | 35 | 22 |
| 8 | 47 | 32 | 20 |
| 9 | 46 | 32 | 20 |
| 10 | 46 | 31 | 20 |
| 11 | 40 | 27 | 17 |
| 12 | 37 | 25 | 16 |
| 13 | 36 | 25 | 16 |
| 14 | 27 | 18 | 12 |
| 15 | 27 | 18 | 12 |
| 16 | 19 | 13 | 8 |
| 17 | 11 | 7 | 5 |
| 18 | 11 | 7 | 5 |
| 19 | 6 | 4 | 3 |
| 20 | 3 | 2 | 1 |
| 21 | 2 | 1 | 1 |
| 22 | 1 | 0 | 0 |
| 23 | 1 | 0 | 0 |
| 24 | 1 | 0 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 113 | 1 | 29 | No | No | No | No | No | No | No | No | No | No |
| 2 | 1 | 110 | 1 | 28 | No | No | No | No | No | No | No | No | No | No |
| 3 | 1 | 108 | 1 | 28 | No | No | No | No | No | No | No | No | No | No |
| 4 | 1 | 101 | 1 | 26 | No | No | No | No | No | No | No | No | No | No |
| 5 | 1 | 89 | 1 | 23 | No | No | No | No | No | No | No | No | No | No |
| 6 | 1 | 88 | 1 | 23 | No | No | No | No | No | No | No | No | No | No |
| 7 | 1 | 87 | 1 | 22 | No | No | No | No | No | No | No | No | No | No |
| 8 | 1 | 79 | 1 | 20 | No | No | No | No | No | No | No | No | No | No |
| 9 | 1 | 78 | 1 | 20 | No | No | No | No | No | No | No | No | No | No |
| 10 | 1 | 77 | 1 | 20 | No | No | No | No | No | No | No | No | No | No |
| 11 | 1 | 67 | 1 | 17 | No | No | No | No | No | No | No | No | No | No |
| 12 | 1 | 62 | 1 | 16 | No | No | No | No | No | No | No | No | No | No |
| 13 | 1 | 61 | 1 | 16 | No | No | No | No | No | No | No | No | No | No |
| 14 | 1 | 45 | 1 | 12 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 45 | 1 | 12 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 32 | 1 | 8 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 18 | 1 | 5 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 18 | 1 | 5 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 10 | 1 | 3 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 5 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 3 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 1 | 1 | 0 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 1 | 1 | 0 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 1 | 1 | 0 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Warrant 3 Condition A

| | |
|---|---|
| Orientation | S |
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 9.4 |
| Number of Lanes on Minor Street Approach | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:04 |
| Delay Condition Met | No |
| Volume on Minor Street Approach During Same Hour | 29 |
| High Minor Volume Condition Met | No |
| Total Entering Volume on All Approaches During Same Hour | 142 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | No |
| Warrant Met for Approach | No |
| **Warrant Met for Intersection** | **No** |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | S | N | E |
| 1 | 1423 | 942 | 25 |
| 2 | 1380 | 914 | 24 |
| 3 | 1352 | 895 | 24 |
| 4 | 1266 | 838 | 22 |
| 5 | 1124 | 744 | 20 |
| 6 | 1110 | 735 | 20 |
| 7 | 1096 | 725 | 19 |
| 8 | 996 | 659 | 18 |
| 9 | 982 | 650 | 17 |
| 10 | 968 | 641 | 17 |
| 11 | 840 | 556 | 15 |
| 12 | 783 | 518 | 14 |
| 13 | 768 | 509 | 14 |
| 14 | 569 | 377 | 10 |
| 15 | 569 | 377 | 10 |
| 16 | 398 | 264 | 7 |
| 17 | 228 | 151 | 4 |
| 18 | 228 | 151 | 4 |
| 19 | 128 | 85 | 2 |
| 20 | 71 | 47 | 1 |
| 21 | 43 | 28 | 1 |
| 22 | 14 | 9 | 0 |
| 23 | 14 | 9 | 0 |
| 24 | 14 | 9 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 2 | 2365 | 2 | 25 | No | No | No | No | No | No | No | No | No | No |
| 2 | 2 | 2294 | 2 | 24 | No | No | No | No | No | No | No | No | No | No |
| 3 | 2 | 2247 | 2 | 24 | No | No | No | No | No | No | No | No | No | No |
| 4 | 2 | 2104 | 2 | 22 | No | No | No | No | No | No | No | No | No | No |
| 5 | 2 | 1868 | 2 | 20 | No | No | No | No | No | No | No | No | No | No |
| 6 | 2 | 1845 | 2 | 20 | No | No | No | No | No | No | No | No | No | No |
| 7 | 2 | 1821 | 2 | 19 | No | No | No | No | No | No | No | No | No | No |
| 8 | 2 | 1655 | 2 | 18 | No | No | No | No | No | No | No | No | No | No |
| 9 | 2 | 1632 | 2 | 17 | No | No | No | No | No | No | No | No | No | No |
| 10 | 2 | 1609 | 2 | 17 | No | No | No | No | No | No | No | No | No | No |
| 11 | 2 | 1396 | 2 | 15 | No | No | No | No | No | No | No | No | No | No |
| 12 | 2 | 1301 | 2 | 14 | No | No | No | No | No | No | No | No | No | No |
| 13 | 2 | 1277 | 2 | 14 | No | No | No | No | No | No | No | No | No | No |
| 14 | 2 | 946 | 2 | 10 | No | No | No | No | No | No | No | No | No | No |
| 15 | 2 | 946 | 2 | 10 | No | No | No | No | No | No | No | No | No | No |
| 16 | 2 | 662 | 2 | 7 | No | No | No | No | No | No | No | No | No | No |
| 17 | 2 | 379 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 18 | 2 | 379 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 19 | 2 | 213 | 2 | 2 | No | No | No | No | No | No | No | No | No | No |
| 20 | 2 | 118 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 21 | 2 | 71 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 22 | 2 | 23 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 23 | 2 | 23 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| 24 | 2 | 23 | 2 | 0 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Warrant 3 Condition A

| | |
|---|---|
| Orientation | E |
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 25 |
| Number of Lanes on Minor Street Approach | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:10 |
| Delay Condition Met | No |
| Volume on Minor Street Approach During Same Hour | 25 |
| High Minor Volume Condition Met | No |
| Total Entering Volume on All Approaches During Same Hour | 2390 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | Yes |
| Warrant Met for Approach | No |
| **Warrant Met for Intersection** | **No** |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | E | W | S |
| 1 | 41 | 57 | 96 |
| 2 | 40 | 55 | 93 |
| 3 | 39 | 54 | 91 |
| 4 | 36 | 51 | 85 |
| 5 | 32 | 45 | 76 |
| 6 | 32 | 44 | 75 |
| 7 | 32 | 44 | 74 |
| 8 | 29 | 40 | 67 |
| 9 | 28 | 39 | 66 |
| 10 | 28 | 39 | 65 |
| 11 | 24 | 34 | 57 |
| 12 | 23 | 31 | 53 |
| 13 | 22 | 31 | 52 |
| 14 | 16 | 23 | 38 |
| 15 | 16 | 23 | 38 |
| 16 | 11 | 16 | 27 |
| 17 | 7 | 9 | 15 |
| 18 | 7 | 9 | 15 |
| 19 | 4 | 5 | 9 |
| 20 | 2 | 3 | 5 |
| 21 | 1 | 2 | 3 |
| 22 | 0 | 1 | 1 |
| 23 | 0 | 1 | 1 |
| 24 | 0 | 1 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 98 | 1 | 96 | No | No | No | No | No | No | No | No | No | No |
| 2 | 1 | 95 | 1 | 93 | No | No | No | No | No | No | No | No | No | No |
| 3 | 1 | 93 | 1 | 91 | No | No | No | No | No | No | No | No | No | No |
| 4 | 1 | 87 | 1 | 85 | No | No | No | No | No | No | No | No | No | No |
| 5 | 1 | 77 | 1 | 76 | No | No | No | No | No | No | No | No | No | No |
| 6 | 1 | 76 | 1 | 75 | No | No | No | No | No | No | No | No | No | No |
| 7 | 1 | 76 | 1 | 74 | No | No | No | No | No | No | No | No | No | No |
| 8 | 1 | 69 | 1 | 67 | No | No | No | No | No | No | No | No | No | No |
| 9 | 1 | 67 | 1 | 66 | No | No | No | No | No | No | No | No | No | No |
| 10 | 1 | 67 | 1 | 65 | No | No | No | No | No | No | No | No | No | No |
| 11 | 1 | 58 | 1 | 57 | No | No | No | No | No | No | No | No | No | No |
| 12 | 1 | 54 | 1 | 53 | No | No | No | No | No | No | No | No | No | No |
| 13 | 1 | 53 | 1 | 52 | No | No | No | No | No | No | No | No | No | No |
| 14 | 1 | 39 | 1 | 38 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 39 | 1 | 38 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 27 | 1 | 27 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 16 | 1 | 15 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 16 | 1 | 15 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 9 | 1 | 9 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 5 | 1 | 5 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 3 | 1 | 3 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 1 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 1 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 1 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Warrant 3 Condition A

| | |
|---|---|
| Orientation | S |
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 9.2 |
| Number of Lanes on Minor Street Approach | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:14 |
| Delay Condition Met | No |
| Volume on Minor Street Approach During Same Hour | 96 |
| High Minor Volume Condition Met | No |
| Total Entering Volume on All Approaches During Same Hour | 194 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | No |
| Warrant Met for Approach | No |
| **Warrant Met for Intersection** | **No** |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1815 | 1274 | 144 | 34 |
| 2 | 1761 | 1236 | 140 | 33 |
| 3 | 1724 | 1210 | 137 | 32 |
| 4 | 1615 | 1134 | 128 | 30 |
| 5 | 1434 | 1006 | 114 | 27 |
| 6 | 1416 | 994 | 112 | 27 |
| 7 | 1398 | 981 | 111 | 26 |
| 8 | 1271 | 892 | 101 | 24 |
| 9 | 1252 | 879 | 99 | 23 |
| 10 | 1234 | 866 | 98 | 23 |
| 11 | 1071 | 752 | 85 | 20 |
| 12 | 998 | 701 | 79 | 19 |
| 13 | 980 | 688 | 78 | 18 |
| 14 | 726 | 510 | 58 | 14 |
| 15 | 726 | 510 | 58 | 14 |
| 16 | 508 | 357 | 40 | 10 |
| 17 | 290 | 204 | 23 | 5 |
| 18 | 290 | 204 | 23 | 5 |
| 19 | 163 | 115 | 13 | 3 |
| 20 | 91 | 64 | 7 | 2 |
| 21 | 54 | 38 | 4 | 1 |
| 22 | 18 | 13 | 1 | 0 |
| 23 | 18 | 13 | 1 | 0 |
| 24 | 18 | 13 | 1 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 3089 | 2 | 144 | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 2997 | 2 | 140 | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 2934 | 2 | 137 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 2749 | 2 | 128 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 2440 | 2 | 114 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 2410 | 2 | 112 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 2379 | 2 | 111 | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 2163 | 2 | 101 | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 2131 | 2 | 99 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 10 | 3 | 2100 | 2 | 98 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 11 | 3 | 1823 | 2 | 85 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 12 | 3 | 1699 | 2 | 79 | No | No | No | No | No | No | Yes | Yes | No | No |
| 13 | 3 | 1668 | 2 | 78 | No | No | No | No | No | No | Yes | Yes | No | No |
| 14 | 3 | 1236 | 2 | 58 | No | No | No | No | No | No | No | Yes | No | No |
| 15 | 3 | 1236 | 2 | 58 | No | No | No | No | No | No | No | Yes | No | No |
| 16 | 3 | 865 | 2 | 40 | No | No | No | No | No | No | No | No | No | No |
| 17 | 3 | 494 | 2 | 23 | No | No | No | No | No | No | No | No | No | No |
| 18 | 3 | 494 | 2 | 23 | No | No | No | No | No | No | No | No | No | No |
| 19 | 3 | 278 | 2 | 13 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 155 | 2 | 7 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 92 | 2 | 4 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 31 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 31 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 31 | 2 | 1 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 2 | 6 | 8 | 11 | 13 | 15 | 11 | 8 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 8275.3 | 139 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 331:00 | 1:18 |
| Delay Condition Met | Yes | No |
| Volume on Minor Street Approach During Same Hour | 144 | 34 |
| High Minor Volume Condition Met | No | No |
| Total Entering Volume on All Approaches During Same Hour | 3267 | 3267 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | No |
| **Warrant Met for Intersection** | **No** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 319 | 614 | 41 | 62 |
| 2 | 309 | 596 | 40 | 60 |
| 3 | 303 | 583 | 39 | 59 |
| 4 | 284 | 546 | 36 | 55 |
| 5 | 252 | 485 | 32 | 49 |
| 6 | 249 | 479 | 32 | 48 |
| 7 | 246 | 473 | 32 | 48 |
| 8 | 223 | 430 | 29 | 43 |
| 9 | 220 | 424 | 28 | 43 |
| 10 | 217 | 418 | 28 | 42 |
| 11 | 188 | 362 | 24 | 37 |
| 12 | 175 | 338 | 23 | 34 |
| 13 | 172 | 332 | 22 | 33 |
| 14 | 128 | 246 | 16 | 25 |
| 15 | 128 | 246 | 16 | 25 |
| 16 | 89 | 172 | 11 | 17 |
| 17 | 51 | 98 | 7 | 10 |
| 18 | 51 | 98 | 7 | 10 |
| 19 | 29 | 55 | 4 | 6 |
| 20 | 16 | 31 | 2 | 3 |
| 21 | 10 | 18 | 1 | 2 |
| 22 | 3 | 6 | 0 | 1 |
| 23 | 3 | 6 | 0 | 1 |
| 24 | 3 | 6 | 0 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 933 | 1 | 62 | No | No | No | No | No | Yes | Yes | Yes | No | No |
| 2 | 1 | 905 | 1 | 60 | No | No | No | No | No | Yes | Yes | Yes | No | No |
| 3 | 1 | 886 | 1 | 59 | No | No | No | No | No | No | Yes | Yes | No | No |
| 4 | 1 | 830 | 1 | 55 | No | No | No | No | No | No | Yes | Yes | No | No |
| 5 | 1 | 737 | 1 | 49 | No | No | No | No | No | No | No | Yes | No | No |
| 6 | 1 | 728 | 1 | 48 | No | No | No | No | No | No | No | Yes | No | No |
| 7 | 1 | 719 | 1 | 48 | No | No | No | No | No | No | No | Yes | No | No |
| 8 | 1 | 653 | 1 | 43 | No | No | No | No | No | No | No | Yes | No | No |
| 9 | 1 | 644 | 1 | 43 | No | No | No | No | No | No | No | Yes | No | No |
| 10 | 1 | 635 | 1 | 42 | No | No | No | No | No | No | No | Yes | No | No |
| 11 | 1 | 550 | 1 | 37 | No | No | No | No | No | No | No | No | No | No |
| 12 | 1 | 513 | 1 | 34 | No | No | No | No | No | No | No | No | No | No |
| 13 | 1 | 504 | 1 | 33 | No | No | No | No | No | No | No | No | No | No |
| 14 | 1 | 374 | 1 | 25 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 374 | 1 | 25 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 261 | 1 | 17 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 149 | 1 | 10 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 149 | 1 | 10 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 84 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 47 | 1 | 3 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 28 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 10 | 0 | 0 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 9.9 | 80.9 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:06 | 1:23 |
| Delay Condition Met | No | No |
| Volume on Minor Street Approach During Same Hour | 41 | 62 |
| High Minor Volume Condition Met | No | No |
| Total Entering Volume on All Approaches During Same Hour | 1036 | 1036 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | No |
| **Warrant Met for Intersection** | **No** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1821 | 1306 | 530 | 81 |
| 2 | 1766 | 1267 | 514 | 79 |
| 3 | 1730 | 1241 | 504 | 77 |
| 4 | 1621 | 1162 | 472 | 72 |
| 5 | 1439 | 1032 | 419 | 64 |
| 6 | 1420 | 1019 | 413 | 63 |
| 7 | 1402 | 1006 | 408 | 62 |
| 8 | 1275 | 914 | 371 | 57 |
| 9 | 1256 | 901 | 366 | 56 |
| 10 | 1238 | 888 | 360 | 55 |
| 11 | 1074 | 771 | 313 | 48 |
| 12 | 1002 | 718 | 292 | 45 |
| 13 | 983 | 705 | 286 | 44 |
| 14 | 728 | 522 | 212 | 32 |
| 15 | 728 | 522 | 212 | 32 |
| 16 | 510 | 366 | 148 | 23 |
| 17 | 291 | 209 | 85 | 13 |
| 18 | 291 | 209 | 85 | 13 |
| 19 | 164 | 118 | 48 | 7 |
| 20 | 91 | 65 | 27 | 4 |
| 21 | 55 | 39 | 16 | 2 |
| 22 | 18 | 13 | 5 | 1 |
| 23 | 18 | 13 | 5 | 1 |
| 24 | 18 | 13 | 5 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 3127 | 2 | 530 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 3033 | 2 | 514 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 2971 | 2 | 504 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 2783 | 2 | 472 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 2471 | 2 | 419 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 2439 | 2 | 413 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 2408 | 2 | 408 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 2189 | 2 | 371 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 2157 | 2 | 366 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 2126 | 2 | 360 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 1845 | 2 | 313 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 1720 | 2 | 292 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 1688 | 2 | 286 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1250 | 2 | 212 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1250 | 2 | 212 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 876 | 2 | 148 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 17 | 3 | 500 | 2 | 85 | No | No | No | No | No | No | No | No | No | No |
| 18 | 3 | 500 | 2 | 85 | No | No | No | No | No | No | No | No | No | No |
| 19 | 3 | 282 | 2 | 48 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 156 | 2 | 27 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 94 | 2 | 16 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 15 | 15 | 16 | 16 | 15 | 16 | 16 | 16 | 16 | 15 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 8273.1 | 405.5 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 1217:59 | 9:07 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 530 | 81 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 3738 | 3738 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 388 | 268 | 153 | 167 |
| 2 | 376 | 260 | 148 | 162 |
| 3 | 369 | 255 | 145 | 159 |
| 4 | 345 | 239 | 136 | 149 |
| 5 | 307 | 212 | 121 | 132 |
| 6 | 303 | 209 | 119 | 130 |
| 7 | 299 | 206 | 118 | 129 |
| 8 | 272 | 188 | 107 | 117 |
| 9 | 268 | 185 | 106 | 115 |
| 10 | 264 | 182 | 104 | 114 |
| 11 | 229 | 158 | 90 | 99 |
| 12 | 213 | 147 | 84 | 92 |
| 13 | 210 | 145 | 83 | 90 |
| 14 | 155 | 107 | 61 | 67 |
| 15 | 155 | 107 | 61 | 67 |
| 16 | 109 | 75 | 43 | 47 |
| 17 | 62 | 43 | 24 | 27 |
| 18 | 62 | 43 | 24 | 27 |
| 19 | 35 | 24 | 14 | 15 |
| 20 | 19 | 13 | 8 | 8 |
| 21 | 12 | 8 | 5 | 5 |
| 22 | 4 | 3 | 2 | 2 |
| 23 | 4 | 3 | 2 | 2 |
| 24 | 4 | 3 | 2 | 2 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 656 | 1 | 167 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 2 | 1 | 636 | 1 | 162 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 3 | 1 | 624 | 1 | 159 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 4 | 1 | 584 | 1 | 149 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 5 | 1 | 519 | 1 | 132 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 6 | 1 | 512 | 1 | 130 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 7 | 1 | 505 | 1 | 129 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 8 | 1 | 460 | 1 | 117 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 9 | 1 | 453 | 1 | 115 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 10 | 1 | 446 | 1 | 114 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 11 | 1 | 387 | 1 | 99 | No | No | No | Yes | No | No | No | No | No | No |
| 12 | 1 | 360 | 1 | 92 | No | No | No | Yes | No | No | No | No | No | No |
| 13 | 1 | 355 | 1 | 90 | No | No | No | Yes | No | No | No | No | No | No |
| 14 | 1 | 262 | 1 | 67 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 262 | 1 | 67 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 184 | 1 | 47 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 105 | 1 | 27 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 105 | 1 | 27 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 59 | 1 | 15 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 32 | 1 | 8 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 20 | 1 | 5 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 3 | 7 | 10 | 13 | 0 | 3 | 4 | 10 | 0 | 0 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 11.8 | 15.5 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:30 | 0:43 |
| Delay Condition Met | No | No |
| Volume on Minor Street Approach During Same Hour | 153 | 167 |
| High Minor Volume Condition Met | Yes | Yes |
| Total Entering Volume on All Approaches During Same Hour | 976 | 976 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | No |
| **Warrant Met for Intersection** | **No** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1821 | 1278 | 151 | 34 |
| 2 | 1766 | 1240 | 146 | 33 |
| 3 | 1730 | 1214 | 143 | 32 |
| 4 | 1621 | 1137 | 134 | 30 |
| 5 | 1439 | 1010 | 119 | 27 |
| 6 | 1420 | 997 | 118 | 27 |
| 7 | 1402 | 984 | 116 | 26 |
| 8 | 1275 | 895 | 106 | 24 |
| 9 | 1256 | 882 | 104 | 23 |
| 10 | 1238 | 869 | 103 | 23 |
| 11 | 1074 | 754 | 89 | 20 |
| 12 | 1002 | 703 | 83 | 19 |
| 13 | 983 | 690 | 82 | 18 |
| 14 | 728 | 511 | 60 | 14 |
| 15 | 728 | 511 | 60 | 14 |
| 16 | 510 | 358 | 42 | 10 |
| 17 | 291 | 204 | 24 | 5 |
| 18 | 291 | 204 | 24 | 5 |
| 19 | 164 | 115 | 14 | 3 |
| 20 | 91 | 64 | 8 | 2 |
| 21 | 55 | 38 | 5 | 1 |
| 22 | 18 | 13 | 2 | 0 |
| 23 | 18 | 13 | 2 | 0 |
| 24 | 18 | 13 | 2 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 3099 | 2 | 151 | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 3006 | 2 | 146 | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 2944 | 2 | 143 | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 2758 | 2 | 134 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 2449 | 2 | 119 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 2417 | 2 | 118 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 2386 | 2 | 116 | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 2170 | 2 | 106 | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 2138 | 2 | 104 | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 2107 | 2 | 103 | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 1828 | 2 | 89 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 12 | 3 | 1705 | 2 | 83 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 13 | 3 | 1673 | 2 | 82 | No | No | No | No | No | Yes | Yes | Yes | Yes | No |
| 14 | 3 | 1239 | 2 | 60 | No | No | No | No | No | No | No | Yes | No | No |
| 15 | 3 | 1239 | 2 | 60 | No | No | No | No | No | No | No | Yes | No | No |
| 16 | 3 | 868 | 2 | 42 | No | No | No | No | No | No | No | No | No | No |
| 17 | 3 | 495 | 2 | 24 | No | No | No | No | No | No | No | No | No | No |
| 18 | 3 | 495 | 2 | 24 | No | No | No | No | No | No | No | No | No | No |
| 19 | 3 | 279 | 2 | 14 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 155 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 93 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 31 | 2 | 2 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 31 | 2 | 2 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 31 | 2 | 2 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 3 | 7 | 10 | 13 | 13 | 15 | 13 | 10 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 8297.8 | 148.5 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 348:02 | 1:24 |
| Delay Condition Met | Yes | No |
| Volume on Minor Street Approach During Same Hour | 151 | 34 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 3284 | 3284 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 327 | 624 | 41 | 66 |
| 2 | 317 | 605 | 40 | 64 |
| 3 | 311 | 593 | 39 | 63 |
| 4 | 291 | 555 | 36 | 59 |
| 5 | 258 | 493 | 32 | 52 |
| 6 | 255 | 487 | 32 | 51 |
| 7 | 252 | 480 | 32 | 51 |
| 8 | 229 | 437 | 29 | 46 |
| 9 | 226 | 431 | 28 | 46 |
| 10 | 222 | 424 | 28 | 45 |
| 11 | 193 | 368 | 24 | 39 |
| 12 | 180 | 343 | 23 | 36 |
| 13 | 177 | 337 | 22 | 36 |
| 14 | 131 | 250 | 16 | 26 |
| 15 | 131 | 250 | 16 | 26 |
| 16 | 92 | 175 | 11 | 18 |
| 17 | 52 | 100 | 7 | 11 |
| 18 | 52 | 100 | 7 | 11 |
| 19 | 29 | 56 | 4 | 6 |
| 20 | 16 | 31 | 2 | 3 |
| 21 | 10 | 19 | 1 | 2 |
| 22 | 3 | 6 | 0 | 1 |
| 23 | 3 | 6 | 0 | 1 |
| 24 | 3 | 6 | 0 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 951 | 1 | 66 | No | No | No | No | No | Yes | Yes | Yes | No | No |
| 2 | 1 | 922 | 1 | 64 | No | No | No | No | No | Yes | Yes | Yes | No | No |
| 3 | 1 | 904 | 1 | 63 | No | No | No | No | No | Yes | Yes | Yes | No | No |
| 4 | 1 | 846 | 1 | 59 | No | No | No | No | No | No | Yes | Yes | No | No |
| 5 | 1 | 751 | 1 | 52 | No | No | No | No | No | No | Yes | Yes | No | No |
| 6 | 1 | 742 | 1 | 51 | No | No | No | No | No | No | No | Yes | No | No |
| 7 | 1 | 732 | 1 | 51 | No | No | No | No | No | No | No | Yes | No | No |
| 8 | 1 | 666 | 1 | 46 | No | No | No | No | No | No | No | Yes | No | No |
| 9 | 1 | 657 | 1 | 46 | No | No | No | No | No | No | No | Yes | No | No |
| 10 | 1 | 646 | 1 | 45 | No | No | No | No | No | No | No | Yes | No | No |
| 11 | 1 | 561 | 1 | 39 | No | No | No | No | No | No | No | No | No | No |
| 12 | 1 | 523 | 1 | 36 | No | No | No | No | No | No | No | No | No | No |
| 13 | 1 | 514 | 1 | 36 | No | No | No | No | No | No | No | No | No | No |
| 14 | 1 | 381 | 1 | 26 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 381 | 1 | 26 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 267 | 1 | 18 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 152 | 1 | 11 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 152 | 1 | 11 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 85 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 47 | 1 | 3 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 29 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 9 | 1 | 1 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 10 | 0 | 0 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10 | 88.1 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:06 | 1:36 |
| Delay Condition Met | No | No |
| Volume on Minor Street Approach During Same Hour | 41 | 66 |
| High Minor Volume Condition Met | No | No |
| Total Entering Volume on All Approaches During Same Hour | 1058 | 1058 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | No |
| **Warrant Met for Intersection** | **No** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1827 | 1307 | 540 | 81 |
| 2 | 1772 | 1268 | 524 | 79 |
| 3 | 1736 | 1242 | 513 | 77 |
| 4 | 1626 | 1163 | 481 | 72 |
| 5 | 1443 | 1033 | 427 | 64 |
| 6 | 1425 | 1019 | 421 | 63 |
| 7 | 1407 | 1006 | 416 | 62 |
| 8 | 1279 | 915 | 378 | 57 |
| 9 | 1261 | 902 | 373 | 56 |
| 10 | 1242 | 889 | 367 | 55 |
| 11 | 1078 | 771 | 319 | 48 |
| 12 | 1005 | 719 | 297 | 45 |
| 13 | 987 | 706 | 292 | 44 |
| 14 | 731 | 523 | 216 | 32 |
| 15 | 731 | 523 | 216 | 32 |
| 16 | 512 | 366 | 151 | 23 |
| 17 | 292 | 209 | 86 | 13 |
| 18 | 292 | 209 | 86 | 13 |
| 19 | 164 | 118 | 49 | 7 |
| 20 | 91 | 65 | 27 | 4 |
| 21 | 55 | 39 | 16 | 2 |
| 22 | 18 | 13 | 5 | 1 |
| 23 | 18 | 13 | 5 | 1 |
| 24 | 18 | 13 | 5 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 3134 | 2 | 540 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 3040 | 2 | 524 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 2978 | 2 | 513 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 2789 | 2 | 481 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 2476 | 2 | 427 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 2444 | 2 | 421 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 2413 | 2 | 416 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 2194 | 2 | 378 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 2163 | 2 | 373 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 2131 | 2 | 367 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 1849 | 2 | 319 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 1724 | 2 | 297 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 1693 | 2 | 292 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1254 | 2 | 216 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1254 | 2 | 216 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 878 | 2 | 151 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 17 | 3 | 501 | 2 | 86 | No | No | No | No | No | No | No | No | No | No |
| 18 | 3 | 501 | 2 | 86 | No | No | No | No | No | No | No | No | No | No |
| 19 | 3 | 282 | 2 | 49 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 156 | 2 | 27 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 94 | 2 | 16 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 31 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 15 | 15 | 16 | 16 | 15 | 16 | 16 | 16 | 16 | 15 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 8232.3 | 422 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 1234:50 | 9:29 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 540 | 81 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 3755 | 3755 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | No |
| #2 | Four Hour Vehicular Volume | No |
| #3 | Peak Hour | No |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 402 | 275 | 153 | 168 |
| 2 | 390 | 267 | 148 | 163 |
| 3 | 382 | 261 | 145 | 160 |
| 4 | 358 | 245 | 136 | 150 |
| 5 | 318 | 217 | 121 | 133 |
| 6 | 314 | 215 | 119 | 131 |
| 7 | 310 | 212 | 118 | 129 |
| 8 | 281 | 193 | 107 | 118 |
| 9 | 277 | 190 | 106 | 116 |
| 10 | 273 | 187 | 104 | 114 |
| 11 | 237 | 162 | 90 | 99 |
| 12 | 221 | 151 | 84 | 92 |
| 13 | 217 | 149 | 83 | 91 |
| 14 | 161 | 110 | 61 | 67 |
| 15 | 161 | 110 | 61 | 67 |
| 16 | 113 | 77 | 43 | 47 |
| 17 | 64 | 44 | 24 | 27 |
| 18 | 64 | 44 | 24 | 27 |
| 19 | 36 | 25 | 14 | 15 |
| 20 | 20 | 14 | 8 | 8 |
| 21 | 12 | 8 | 5 | 5 |
| 22 | 4 | 3 | 2 | 2 |
| 23 | 4 | 3 | 2 | 2 |
| 24 | 4 | 3 | 2 | 2 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 677 | 1 | 168 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 2 | 1 | 657 | 1 | 163 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 3 | 1 | 643 | 1 | 160 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 4 | 1 | 603 | 1 | 150 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 5 | 1 | 535 | 1 | 133 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 6 | 1 | 529 | 1 | 131 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 7 | 1 | 522 | 1 | 129 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 8 | 1 | 474 | 1 | 118 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 9 | 1 | 467 | 1 | 116 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 10 | 1 | 460 | 1 | 114 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 11 | 1 | 399 | 1 | 99 | No | No | No | Yes | No | No | No | No | No | No |
| 12 | 1 | 372 | 1 | 92 | No | No | No | Yes | No | No | No | No | No | No |
| 13 | 1 | 366 | 1 | 91 | No | No | No | Yes | No | No | No | No | No | No |
| 14 | 1 | 271 | 1 | 67 | No | No | No | No | No | No | No | No | No | No |
| 15 | 1 | 271 | 1 | 67 | No | No | No | No | No | No | No | No | No | No |
| 16 | 1 | 190 | 1 | 47 | No | No | No | No | No | No | No | No | No | No |
| 17 | 1 | 108 | 1 | 27 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 108 | 1 | 27 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 61 | 1 | 15 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 34 | 1 | 8 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 20 | 1 | 5 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 7 | 1 | 2 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 4 | 7 | 10 | 13 | 0 | 4 | 6 | 10 | 0 | 0 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 12 | 16.1 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:30 | 0:44 |
| Delay Condition Met | No | No |
| Volume on Minor Street Approach During Same Hour | 153 | 168 |
| High Minor Volume Condition Met | Yes | Yes |
| Total Entering Volume on All Approaches During Same Hour | 998 | 998 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | No |
| **Warrant Met for Intersection** | **No** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1755 | 2735 | 779 | 34 |
| 2 | 1702 | 2653 | 756 | 33 |
| 3 | 1667 | 2598 | 740 | 32 |
| 4 | 1562 | 2434 | 693 | 30 |
| 5 | 1386 | 2161 | 615 | 27 |
| 6 | 1369 | 2133 | 608 | 27 |
| 7 | 1351 | 2106 | 600 | 26 |
| 8 | 1229 | 1914 | 545 | 24 |
| 9 | 1211 | 1887 | 538 | 23 |
| 10 | 1193 | 1860 | 530 | 23 |
| 11 | 1035 | 1614 | 460 | 20 |
| 12 | 965 | 1504 | 428 | 19 |
| 13 | 948 | 1477 | 421 | 18 |
| 14 | 702 | 1094 | 312 | 14 |
| 15 | 702 | 1094 | 312 | 14 |
| 16 | 491 | 766 | 218 | 10 |
| 17 | 281 | 438 | 125 | 5 |
| 18 | 281 | 438 | 125 | 5 |
| 19 | 158 | 246 | 70 | 3 |
| 20 | 88 | 137 | 39 | 2 |
| 21 | 53 | 82 | 23 | 1 |
| 22 | 18 | 27 | 8 | 0 |
| 23 | 18 | 27 | 8 | 0 |
| 24 | 18 | 27 | 8 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 4490 | 2 | 779 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 4355 | 2 | 756 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 4265 | 2 | 740 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 3996 | 2 | 693 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 3547 | 2 | 615 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 3502 | 2 | 608 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 3457 | 2 | 600 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 3143 | 2 | 545 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 3098 | 2 | 538 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 3053 | 2 | 530 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 2649 | 2 | 460 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 2469 | 2 | 428 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 2425 | 2 | 421 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1796 | 2 | 312 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1796 | 2 | 312 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 1257 | 2 | 218 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 17 | 3 | 719 | 2 | 125 | No | No | No | Yes | No | No | Yes | Yes | No | No |
| 18 | 3 | 719 | 2 | 125 | No | No | No | Yes | No | No | Yes | Yes | No | No |
| 19 | 3 | 404 | 2 | 70 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 225 | 2 | 39 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 135 | 2 | 23 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 16 | 18 | 16 | 16 | 18 | 18 | 16 | 16 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10000 | 10000 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 2163:53 | 94:26 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 779 | 34 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 5303 | 5303 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 698 | 1344 | 82 | 614 |
| 2 | 677 | 1304 | 80 | 596 |
| 3 | 663 | 1277 | 78 | 583 |
| 4 | 621 | 1196 | 73 | 546 |
| 5 | 551 | 1062 | 65 | 485 |
| 6 | 544 | 1048 | 64 | 479 |
| 7 | 537 | 1035 | 63 | 473 |
| 8 | 489 | 941 | 57 | 430 |
| 9 | 482 | 927 | 57 | 424 |
| 10 | 475 | 914 | 56 | 418 |
| 11 | 412 | 793 | 48 | 362 |
| 12 | 384 | 739 | 45 | 338 |
| 13 | 377 | 726 | 44 | 332 |
| 14 | 279 | 538 | 33 | 246 |
| 15 | 279 | 538 | 33 | 246 |
| 16 | 195 | 376 | 23 | 172 |
| 17 | 112 | 215 | 13 | 98 |
| 18 | 112 | 215 | 13 | 98 |
| 19 | 63 | 121 | 7 | 55 |
| 20 | 35 | 67 | 4 | 31 |
| 21 | 21 | 40 | 2 | 18 |
| 22 | 7 | 13 | 1 | 6 |
| 23 | 7 | 13 | 1 | 6 |
| 24 | 7 | 13 | 1 | 6 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 2042 | 1 | 614 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 1 | 1981 | 1 | 596 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 1 | 1940 | 1 | 583 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 1 | 1817 | 1 | 546 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 1 | 1613 | 1 | 485 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 1 | 1592 | 1 | 479 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 1 | 1572 | 1 | 473 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 1 | 1430 | 1 | 430 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 1 | 1409 | 1 | 424 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 1 | 1389 | 1 | 418 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 1 | 1205 | 1 | 362 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 1 | 1123 | 1 | 338 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 1 | 1103 | 1 | 332 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 1 | 817 | 1 | 246 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 15 | 1 | 817 | 1 | 246 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 16 | 1 | 571 | 1 | 172 | Yes | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 17 | 1 | 327 | 1 | 98 | No | No | No | Yes | No | No | No | No | No | No |
| 18 | 1 | 327 | 1 | 98 | No | No | No | Yes | No | No | No | No | No | No |
| 19 | 1 | 184 | 1 | 55 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 102 | 1 | 31 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 61 | 1 | 18 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 20 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 20 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 20 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 16 | 18 | 15 | 15 | 16 | 16 | 15 | 13 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10.6 | 10000 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:14 | 1705:33 |
| Delay Condition Met | No | Yes |
| Volume on Minor Street Approach During Same Hour | 82 | 614 |
| High Minor Volume Condition Met | No | Yes |
| Total Entering Volume on All Approaches During Same Hour | 2738 | 2738 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | Yes |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 2976 | 1574 | 935 | 81 |
| 2 | 2887 | 1527 | 907 | 79 |
| 3 | 2827 | 1495 | 888 | 77 |
| 4 | 2649 | 1401 | 832 | 72 |
| 5 | 2351 | 1243 | 739 | 64 |
| 6 | 2321 | 1228 | 729 | 63 |
| 7 | 2292 | 1212 | 720 | 62 |
| 8 | 2083 | 1102 | 655 | 57 |
| 9 | 2053 | 1086 | 645 | 56 |
| 10 | 2024 | 1070 | 636 | 55 |
| 11 | 1756 | 929 | 552 | 48 |
| 12 | 1637 | 866 | 514 | 45 |
| 13 | 1607 | 850 | 505 | 44 |
| 14 | 1190 | 630 | 374 | 32 |
| 15 | 1190 | 630 | 374 | 32 |
| 16 | 833 | 441 | 262 | 23 |
| 17 | 476 | 252 | 150 | 13 |
| 18 | 476 | 252 | 150 | 13 |
| 19 | 268 | 142 | 84 | 7 |
| 20 | 149 | 79 | 47 | 4 |
| 21 | 89 | 47 | 28 | 2 |
| 22 | 30 | 16 | 9 | 1 |
| 23 | 30 | 16 | 9 | 1 |
| 24 | 30 | 16 | 9 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 4550 | 2 | 935 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 4414 | 2 | 907 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 4322 | 2 | 888 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 4050 | 2 | 832 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 3594 | 2 | 739 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 3549 | 2 | 729 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 3504 | 2 | 720 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 3185 | 2 | 655 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 3139 | 2 | 645 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 3094 | 2 | 636 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 2685 | 2 | 552 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 2503 | 2 | 514 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 2457 | 2 | 505 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1820 | 2 | 374 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1820 | 2 | 374 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 1274 | 2 | 262 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 17 | 3 | 728 | 2 | 150 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 18 | 3 | 728 | 2 | 150 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 19 | 3 | 410 | 2 | 84 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 228 | 2 | 47 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 136 | 2 | 28 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 18 | 18 | 16 | 18 | 18 | 18 | 18 | 16 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10000 | 10000 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 2597:13 | 225:00 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 935 | 81 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 5566 | 5566 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 703 | 824 | 272 | 562 |
| 2 | 682 | 799 | 264 | 545 |
| 3 | 668 | 783 | 258 | 534 |
| 4 | 626 | 733 | 242 | 500 |
| 5 | 555 | 651 | 215 | 444 |
| 6 | 548 | 643 | 212 | 438 |
| 7 | 541 | 634 | 209 | 433 |
| 8 | 492 | 577 | 190 | 393 |
| 9 | 485 | 569 | 188 | 388 |
| 10 | 478 | 560 | 185 | 382 |
| 11 | 415 | 486 | 160 | 332 |
| 12 | 387 | 453 | 150 | 309 |
| 13 | 380 | 445 | 147 | 303 |
| 14 | 281 | 330 | 109 | 225 |
| 15 | 281 | 330 | 109 | 225 |
| 16 | 197 | 231 | 76 | 157 |
| 17 | 112 | 132 | 44 | 90 |
| 18 | 112 | 132 | 44 | 90 |
| 19 | 63 | 74 | 24 | 51 |
| 20 | 35 | 41 | 14 | 28 |
| 21 | 21 | 25 | 8 | 17 |
| 22 | 7 | 8 | 3 | 6 |
| 23 | 7 | 8 | 3 | 6 |
| 24 | 7 | 8 | 3 | 6 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 1527 | 1 | 562 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 1 | 1481 | 1 | 545 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 1 | 1451 | 1 | 534 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 1 | 1359 | 1 | 500 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 1 | 1206 | 1 | 444 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 1 | 1191 | 1 | 438 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 1 | 1175 | 1 | 433 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 1 | 1069 | 1 | 393 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 1 | 1054 | 1 | 388 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 1 | 1038 | 1 | 382 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 1 | 901 | 1 | 332 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 1 | 840 | 1 | 309 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 13 | 1 | 825 | 1 | 303 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 14 | 1 | 611 | 1 | 225 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 15 | 1 | 611 | 1 | 225 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 16 | 1 | 428 | 1 | 157 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 17 | 1 | 244 | 1 | 90 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 244 | 1 | 90 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 137 | 1 | 51 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 76 | 1 | 28 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 46 | 1 | 17 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 15 | 16 | 16 | 16 | 13 | 15 | 15 | 16 | 15 | 11 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 15.5 | 10000 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 1:10 | 1561:06 |
| Delay Condition Met | No | Yes |
| Volume on Minor Street Approach During Same Hour | 272 | 562 |
| High Minor Volume Condition Met | Yes | Yes |
| Total Entering Volume on All Approaches During Same Hour | 2361 | 2361 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | Yes |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 1761 | 2739 | 786 | 34 |
| 2 | 1708 | 2657 | 762 | 33 |
| 3 | 1673 | 2602 | 747 | 32 |
| 4 | 1567 | 2438 | 700 | 30 |
| 5 | 1391 | 2164 | 621 | 27 |
| 6 | 1374 | 2136 | 613 | 27 |
| 7 | 1356 | 2109 | 605 | 26 |
| 8 | 1233 | 1917 | 550 | 24 |
| 9 | 1215 | 1890 | 542 | 23 |
| 10 | 1197 | 1863 | 534 | 23 |
| 11 | 1039 | 1616 | 464 | 20 |
| 12 | 969 | 1506 | 432 | 19 |
| 13 | 951 | 1479 | 424 | 18 |
| 14 | 704 | 1096 | 314 | 14 |
| 15 | 704 | 1096 | 314 | 14 |
| 16 | 493 | 767 | 220 | 10 |
| 17 | 282 | 438 | 126 | 5 |
| 18 | 282 | 438 | 126 | 5 |
| 19 | 158 | 247 | 71 | 3 |
| 20 | 88 | 137 | 39 | 2 |
| 21 | 53 | 82 | 24 | 1 |
| 22 | 18 | 27 | 8 | 0 |
| 23 | 18 | 27 | 8 | 0 |
| 24 | 18 | 27 | 8 | 0 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 4500 | 2 | 786 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 4365 | 2 | 762 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 4275 | 2 | 747 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 4005 | 2 | 700 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 3555 | 2 | 621 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 3510 | 2 | 613 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 3465 | 2 | 605 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 3150 | 2 | 550 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 3105 | 2 | 542 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 3060 | 2 | 534 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 2655 | 2 | 464 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 2475 | 2 | 432 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 2430 | 2 | 424 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1800 | 2 | 314 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1800 | 2 | 314 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 1260 | 2 | 220 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 17 | 3 | 720 | 2 | 126 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 18 | 3 | 720 | 2 | 126 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 19 | 3 | 405 | 2 | 71 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 225 | 2 | 39 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 135 | 2 | 24 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 45 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 16 | 18 | 16 | 18 | 18 | 18 | 16 | 16 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10000 | 10000 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 2183:20 | 94:26 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 786 | 34 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 5320 | 5320 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 706 | 1354 | 82 | 618 |
| 2 | 685 | 1313 | 80 | 599 |
| 3 | 671 | 1286 | 78 | 587 |
| 4 | 628 | 1205 | 73 | 550 |
| 5 | 558 | 1070 | 65 | 488 |
| 6 | 551 | 1056 | 64 | 482 |
| 7 | 544 | 1043 | 63 | 476 |
| 8 | 494 | 948 | 57 | 433 |
| 9 | 487 | 934 | 57 | 426 |
| 10 | 480 | 921 | 56 | 420 |
| 11 | 417 | 799 | 48 | 365 |
| 12 | 388 | 745 | 45 | 340 |
| 13 | 381 | 731 | 44 | 334 |
| 14 | 282 | 542 | 33 | 247 |
| 15 | 282 | 542 | 33 | 247 |
| 16 | 198 | 379 | 23 | 173 |
| 17 | 113 | 217 | 13 | 99 |
| 18 | 113 | 217 | 13 | 99 |
| 19 | 64 | 122 | 7 | 56 |
| 20 | 35 | 68 | 4 | 31 |
| 21 | 21 | 41 | 2 | 19 |
| 22 | 7 | 14 | 1 | 6 |
| 23 | 7 | 14 | 1 | 6 |
| 24 | 7 | 14 | 1 | 6 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 2060 | 1 | 618 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 1 | 1998 | 1 | 599 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 1 | 1957 | 1 | 587 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 1 | 1833 | 1 | 550 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 1 | 1628 | 1 | 488 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 1 | 1607 | 1 | 482 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 1 | 1587 | 1 | 476 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 1 | 1442 | 1 | 433 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 1 | 1421 | 1 | 426 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 1 | 1401 | 1 | 420 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 1 | 1216 | 1 | 365 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 1 | 1133 | 1 | 340 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 1 | 1112 | 1 | 334 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 1 | 824 | 1 | 247 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 15 | 1 | 824 | 1 | 247 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 16 | 1 | 577 | 1 | 173 | Yes | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 17 | 1 | 330 | 1 | 99 | No | No | No | Yes | No | No | No | No | No | No |
| 18 | 1 | 330 | 1 | 99 | No | No | No | Yes | No | No | No | No | No | No |
| 19 | 1 | 186 | 1 | 56 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 103 | 1 | 31 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 62 | 1 | 19 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 21 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 21 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 21 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 16 | 18 | 15 | 15 | 16 | 16 | 15 | 13 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10.6 | 10000 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:14 | 1716:40 |
| Delay Condition Met | No | Yes |
| Volume on Minor Street Approach During Same Hour | 82 | 618 |
| High Minor Volume Condition Met | No | Yes |
| Total Entering Volume on All Approaches During Same Hour | 2760 | 2760 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | Yes |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | E, W |
| Speed > 40mph | Yes |
| Population < 10,000 | No |
| Warrant Factor | 70% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | S | N | E | W |
| 1 | 2982 | 1575 | 945 | 81 |
| 2 | 2893 | 1528 | 917 | 79 |
| 3 | 2833 | 1496 | 898 | 77 |
| 4 | 2654 | 1402 | 841 | 72 |
| 5 | 2356 | 1244 | 747 | 64 |
| 6 | 2326 | 1229 | 737 | 63 |
| 7 | 2296 | 1213 | 728 | 62 |
| 8 | 2087 | 1103 | 662 | 57 |
| 9 | 2058 | 1087 | 652 | 56 |
| 10 | 2028 | 1071 | 643 | 55 |
| 11 | 1759 | 929 | 558 | 48 |
| 12 | 1640 | 866 | 520 | 45 |
| 13 | 1610 | 851 | 510 | 44 |
| 14 | 1193 | 630 | 378 | 32 |
| 15 | 1193 | 630 | 378 | 32 |
| 16 | 835 | 441 | 265 | 23 |
| 17 | 477 | 252 | 151 | 13 |
| 18 | 477 | 252 | 151 | 13 |
| 19 | 268 | 142 | 85 | 7 |
| 20 | 149 | 79 | 47 | 4 |
| 21 | 89 | 47 | 28 | 2 |
| 22 | 30 | 16 | 9 | 1 |
| 23 | 30 | 16 | 9 | 1 |
| 24 | 30 | 16 | 9 | 1 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 3 | 4557 | 2 | 945 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 3 | 4421 | 2 | 917 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 3 | 4329 | 2 | 898 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 3 | 4056 | 2 | 841 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 3 | 3600 | 2 | 747 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 3 | 3555 | 2 | 737 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 3 | 3509 | 2 | 728 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 3 | 3190 | 2 | 662 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 3 | 3145 | 2 | 652 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 3 | 3099 | 2 | 643 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 3 | 2688 | 2 | 558 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 3 | 2506 | 2 | 520 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 13 | 3 | 2461 | 2 | 510 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 14 | 3 | 1823 | 2 | 378 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 15 | 3 | 1823 | 2 | 378 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 16 | 3 | 1276 | 2 | 265 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 17 | 3 | 729 | 2 | 151 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 18 | 3 | 729 | 2 | 151 | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 19 | 3 | 410 | 2 | 85 | No | No | No | No | No | No | No | No | No | No |
| 20 | 3 | 228 | 2 | 47 | No | No | No | No | No | No | No | No | No | No |
| 21 | 3 | 136 | 2 | 28 | No | No | No | No | No | No | No | No | No | No |
| 22 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| 23 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| 24 | 3 | 46 | 2 | 9 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 16 | 16 | 18 | 18 | 16 | 18 | 18 | 18 | 18 | 16 |

## Warrant 3 Condition A

| Orientation | E | W |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 10000 | 10000 |
| Number of Lanes on Minor Street Approach | 2 | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 2625:00 | 225:00 |
| Delay Condition Met | Yes | Yes |
| Volume on Minor Street Approach During Same Hour | 945 | 81 |
| High Minor Volume Condition Met | Yes | No |
| Total Entering Volume on All Approaches During Same Hour | 5583 | 5583 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | Yes | No |
| **Warrant Met for Intersection** | **Yes** | |

# Signal Warrants Report For Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | E, W |
| Minor Approaches | N, S |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets | |
|---|---|---|---|---|
| | E | W | N | S |
| 1 | 717 | 831 | 272 | 563 |
| 2 | 695 | 806 | 264 | 546 |
| 3 | 681 | 789 | 258 | 535 |
| 4 | 638 | 740 | 242 | 501 |
| 5 | 566 | 656 | 215 | 445 |
| 6 | 559 | 648 | 212 | 439 |
| 7 | 552 | 640 | 209 | 434 |
| 8 | 502 | 582 | 190 | 394 |
| 9 | 495 | 573 | 188 | 388 |
| 10 | 488 | 565 | 185 | 383 |
| 11 | 423 | 490 | 160 | 332 |
| 12 | 394 | 457 | 150 | 310 |
| 13 | 387 | 449 | 147 | 304 |
| 14 | 287 | 332 | 109 | 225 |
| 15 | 287 | 332 | 109 | 225 |
| 16 | 201 | 233 | 76 | 158 |
| 17 | 115 | 133 | 44 | 90 |
| 18 | 115 | 133 | 44 | 90 |
| 19 | 65 | 75 | 24 | 51 |
| 20 | 36 | 42 | 14 | 28 |
| 21 | 22 | 25 | 8 | 17 |
| 22 | 7 | 8 | 3 | 6 |
| 23 | 7 | 8 | 3 | 6 |
| 24 | 7 | 8 | 3 | 6 |

## Warrant Analysis by Hour

| Hour | Major Streets | | Minor Street | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 1 | 1548 | 1 | 563 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 1 | 1501 | 1 | 546 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 1 | 1470 | 1 | 535 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 1 | 1378 | 1 | 501 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 1 | 1222 | 1 | 445 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6 | 1 | 1207 | 1 | 439 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 7 | 1 | 1192 | 1 | 434 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 8 | 1 | 1084 | 1 | 394 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 9 | 1 | 1068 | 1 | 388 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10 | 1 | 1053 | 1 | 383 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 11 | 1 | 913 | 1 | 332 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 12 | 1 | 851 | 1 | 310 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 13 | 1 | 836 | 1 | 304 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 14 | 1 | 619 | 1 | 225 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 15 | 1 | 619 | 1 | 225 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| 16 | 1 | 434 | 1 | 158 | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| 17 | 1 | 248 | 1 | 90 | No | No | No | No | No | No | No | No | No | No |
| 18 | 1 | 248 | 1 | 90 | No | No | No | No | No | No | No | No | No | No |
| 19 | 1 | 140 | 1 | 51 | No | No | No | No | No | No | No | No | No | No |
| 20 | 1 | 78 | 1 | 28 | No | No | No | No | No | No | No | No | No | No |
| 21 | 1 | 47 | 1 | 17 | No | No | No | No | No | No | No | No | No | No |
| 22 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 23 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| 24 | 1 | 15 | 1 | 6 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 15 | 16 | 16 | 16 | 13 | 15 | 15 | 16 | 15 | 11 |

## Warrant 3 Condition A

| Orientation | N | S |
|---|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 15.8 | 10000 |
| Number of Lanes on Minor Street Approach | 1 | 1 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 1:11 | 1563:53 |
| Delay Condition Met | No | Yes |
| Volume on Minor Street Approach During Same Hour | 272 | 563 |
| High Minor Volume Condition Met | Yes | Yes |
| Total Entering Volume on All Approaches During Same Hour | 2383 | 2383 |
| Number of Approaches on Intersection | 4 | 4 |
| Total Volume Condition Met | Yes | Yes |
| Warrant Met for Approach | No | Yes |
| **Warrant Met for Intersection** | **Yes** | |

# Appendix C

Existing Conditions

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 42.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.672 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 102 | 781 | 10 | 227 | 1037 | 34 | 52 | 719 | 117 | 4 | 351 | 240 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 102 | 781 | 10 | 227 | 1037 | 34 | 52 | 719 | 117 | 4 | 351 | 240 |
| Peak Hour Factor | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 26 | 202 | 3 | 59 | 269 | 9 | 13 | 186 | 30 | 1 | 91 | 62 |
| Total Analysis Volume [veh/h] | 106 | 809 | 10 | 235 | 1075 | 35 | 54 | 745 | 121 | 4 | 364 | 249 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 105 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 12 | 38 | 0 | 21 | 47 | 0 | 10 | 36 | 0 | 10 | 36 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 7 | 28 | 28 | 16 | 37 | 37 | 4 | 36 | 36 | 1 | 32 | 32 |
| g / C, Green / Cycle | 0.07 | 0.27 | 0.27 | 0.15 | 0.35 | 0.35 | 0.04 | 0.34 | 0.34 | 0.01 | 0.31 | 0.31 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.23 | 0.23 | 0.14 | 0.31 | 0.31 | 0.03 | 0.25 | 0.23 | 0.00 | 0.18 | 0.16 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 118 | 481 | 481 | 263 | 634 | 634 | 68 | 612 | 612 | 10 | 550 | 550 |
| d1, Uniform Delay [s] | 48.48 | 36.53 | 36.49 | 43.55 | 31.93 | 31.80 | 49.95 | 30.34 | 29.87 | 52.00 | 30.88 | 30.11 |
| k, delay calibration | 0.08 | 0.25 | 0.25 | 0.08 | 0.30 | 0.29 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 15.83 | 9.59 | 9.30 | 7.98 | 10.32 | 9.60 | 13.84 | 7.31 | 6.26 | 17.53 | 4.62 | 3.52 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.90 | 0.85 | 0.85 | 0.89 | 0.88 | 0.87 | 0.79 | 0.72 | 0.69 | 0.40 | 0.59 | 0.52 |
| d, Delay for Lane Group [s/veh] | 64.31 | 46.13 | 45.79 | 51.52 | 42.26 | 41.40 | 63.79 | 37.65 | 36.13 | 69.53 | 35.50 | 33.62 |
| Lane Group LOS | E | D | D | D | D | D | E | D | D | E | D | C |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 3.11 | 10.39 | 10.30 | 6.15 | 13.66 | 13.37 | 1.60 | 10.20 | 9.46 | 0.15 | 7.15 | 6.09 |
| 50th-Percentile Queue Length [ft/ln] | 77.69 | 259.73 | 257.50 | 153.70 | 341.43 | 334.21 | 40.00 | 254.96 | 236.47 | 3.74 | 178.77 | 152.15 |
| 95th-Percentile Queue Length [veh/ln] | 5.59 | 15.68 | 15.56 | 10.21 | 19.72 | 19.36 | 2.88 | 15.44 | 14.50 | 0.27 | 11.54 | 10.13 |
| 95th-Percentile Queue Length [ft/ln] | 139.83 | 391.88 | 389.08 | 255.36 | 492.95 | 484.11 | 72.00 | 385.89 | 362.56 | 6.72 | 288.41 | 253.30 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 64.31 | 45.96 | 45.79 | 51.52 | 41.84 | 41.40 | 63.79 | 37.04 | 36.13 | 69.53 | 35.30 | 33.62 |
| Movement LOS | E | D | D | D | D | D | E | D | D | E | D | C |
| d_A, Approach Delay [s/veh] | 48.06 | | | 43.52 | | | 38.49 | | | 34.85 | | |
| Approach LOS | D | | | D | | | D | | | C | | |
| d_I, Intersection Delay [s/veh] | 42.00 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.672 | | | | | | | | | | | |

**Emissions**

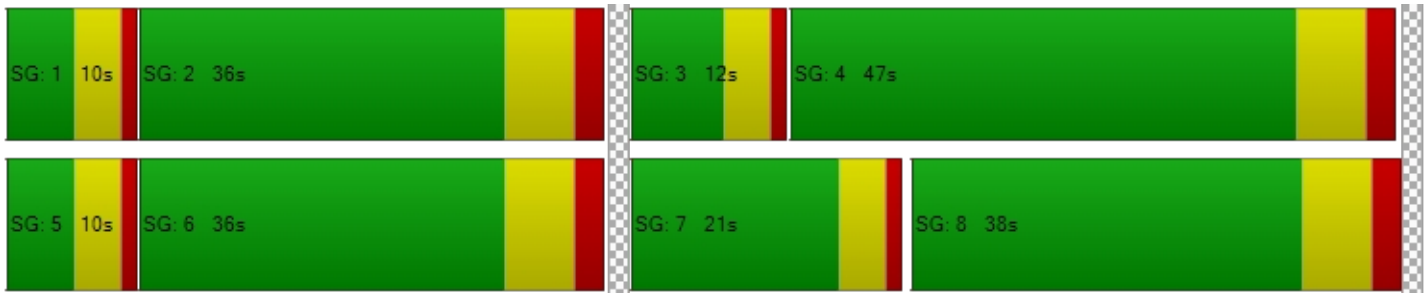
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 6.78 | 26.27 | 26.15 | 13.52 | 32.09 | 31.79 | 5.05 | 41.47 | 39.48 | 0.26 | 20.75 | 18.33 |
| Stops [stops/h] | 106.54 | 356.19 | 353.14 | 210.78 | 468.24 | 458.34 | 54.85 | 349.65 | 324.30 | 5.12 | 245.18 | 208.67 |
| Fuel consumption [US gal/h] | 3.97 | 12.62 | 12.51 | 7.59 | 16.24 | 15.87 | 1.89 | 11.28 | 10.45 | 0.16 | 7.60 | 6.46 |
| CO [g/h] | 277.78 | 882.37 | 874.27 | 530.21 | 1135.33 | 1109.39 | 132.02 | 788.53 | 730.44 | 11.20 | 531.23 | 451.26 |
| NOx [g/h] | 54.05 | 171.68 | 170.10 | 103.16 | 220.89 | 215.85 | 25.69 | 153.42 | 142.12 | 2.18 | 103.36 | 87.80 |
| VOC [g/h] | 64.38 | 204.50 | 202.62 | 122.88 | 263.12 | 257.11 | 30.60 | 182.75 | 169.29 | 2.60 | 123.12 | 104.58 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 581 | 752 | 543 | 543 |
| d_b, Bicycle Delay [s] | 26.43 | 20.43 | 27.87 | 27.87 |
| l_b,int, Bicycle LOS Score for Intersection | 2.323 | 2.669 | 2.319 | 2.069 |
| Bicycle LOS | B | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 44.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.011 |

**Intersection Setup**

| Name | U.S. Route 395 | | U.S. Route 395 | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 13.00 | 12.00 | 12.00 | 13.00 | 20.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | 60.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | U.S. Route 395 | | U.S. Route 395 | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 885 | 8 | 35 | 922 | 1 | 6 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 885 | 8 | 35 | 922 | 1 | 6 |
| Peak Hour Factor | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 249 | 2 | 10 | 260 | 0 | 2 |
| Total Analysis Volume [veh/h] | 997 | 9 | 39 | 1038 | 1 | 7 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Free | | Free | | Stop | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | No | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.06 | 0.01 | 0.01 | 0.01 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 10.58 | 0.00 | 44.79 | 12.10 |
| Movement LOS | A | A | B | A | E | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.18 | 0.00 | 0.03 | 0.04 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 4.52 | 0.00 | 0.83 | 1.04 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.38 | | 16.19 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.26 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.026 |

**Intersection Setup**

| Name | Three Flags Avenue | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Three Flags Avenue | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 15 | 11 | 35 | 63 | 4 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 15 | 11 | 35 | 63 | 4 |
| Peak Hour Factor | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 5 | 5 | 4 | 12 | 21 | 1 |
| Total Analysis Volume [veh/h] | 19 | 20 | 15 | 47 | 84 | 5 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.02 | 0.00 | 0.00 | 0.05 | 0.00 |
| d_M, Delay for Movement [s/veh] | 10.10 | 8.68 | 0.00 | 0.00 | 7.46 | 0.00 |
| Movement LOS | B | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.14 | 0.14 | 0.00 | 0.00 | 0.16 | 0.16 |
| 95th-Percentile Queue Length [ft/ln] | 3.55 | 3.55 | 0.00 | 0.00 | 4.08 | 4.08 |
| d_A, Approach Delay [s/veh] | 9.37 | | 0.00 | | 7.04 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 5.22 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.470 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 24 | 808 | 109 | 21 | 1013 | 78 | 25 | 1 | 88 | 178 | 2 | 45 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 24 | 808 | 109 | 21 | 1013 | 78 | 25 | 1 | 88 | 178 | 2 | 45 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 219 | 30 | 6 | 275 | 21 | 7 | 0 | 24 | 48 | 1 | 12 |
| Total Analysis Volume [veh/h] | 26 | 877 | 118 | 23 | 1100 | 85 | 27 | 1 | 96 | 193 | 2 | 49 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 80 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 48 | 0 | 10 | 48 | 0 | 0 | 22 | 0 | 0 | 22 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 2 | 50 | 50 | 2 | 49 | 49 | 11 | 11 | 11 | 11 | 11 |
| g / C, Green / Cycle | 0.03 | 0.62 | 0.62 | 0.03 | 0.62 | 0.62 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.24 | 0.07 | 0.01 | 0.31 | 0.05 | 0.02 | 0.05 | 0.11 | 0.00 | 0.03 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 48 | 2225 | 1112 | 45 | 2216 | 1108 | 286 | 247 | 205 | 247 | 247 |
| d1, Uniform Delay [s] | 38.34 | 7.72 | 6.25 | 38.45 | 8.51 | 6.20 | 30.27 | 31.48 | 33.60 | 29.82 | 30.62 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.39 | 0.53 | 0.19 | 3.42 | 0.80 | 0.13 | 0.05 | 0.38 | 8.39 | 0.00 | 0.14 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.54 | 0.39 | 0.11 | 0.52 | 0.50 | 0.08 | 0.09 | 0.39 | 0.94 | 0.01 | 0.20 |
| d, Delay for Lane Group [s/veh] | 41.73 | 8.24 | 6.44 | 41.87 | 9.31 | 6.34 | 30.32 | 31.86 | 41.99 | 29.82 | 30.76 |
| Lane Group LOS | D | A | A | D | A | A | C | C | D | C | C |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.50 | 2.61 | 0.59 | 0.45 | 3.63 | 0.42 | 0.44 | 1.65 | 3.93 | 0.03 | 0.81 |
| 50th-Percentile Queue Length [ft/ln] | 12.59 | 65.14 | 14.79 | 11.20 | 90.63 | 10.56 | 10.98 | 41.28 | 98.23 | 0.80 | 20.21 |
| 95th-Percentile Queue Length [veh/ln] | 0.91 | 4.69 | 1.06 | 0.81 | 6.53 | 0.76 | 0.79 | 2.97 | 7.07 | 0.06 | 1.46 |
| 95th-Percentile Queue Length [ft/ln] | 22.67 | 117.26 | 26.62 | 20.16 | 163.14 | 19.00 | 19.76 | 74.30 | 176.82 | 1.44 | 36.38 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 41.73 | 8.24 | 6.44 | 41.87 | 9.31 | 6.34 | 30.32 | 31.86 | 31.86 | 41.99 | 29.82 | 30.76 |
| Movement LOS | D | A | A | D | A | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 8.89 | | | 9.72 | | | 31.52 | | | 39.63 | | |
| Approach LOS | A | | | A | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 13.24 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.470 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.06 | 69.50 | 9.35 | 0.54 | 25.98 | 2.01 | 1.16 | 4.17 | 11.96 | 0.12 | 3.04 |
| Stops [stops/h] | 22.67 | 234.51 | 26.62 | 20.16 | 326.28 | 19.00 | 19.76 | 74.30 | 176.82 | 1.44 | 36.38 |
| Fuel consumption [US gal/h] | 0.79 | 9.03 | 1.06 | 0.66 | 10.18 | 0.60 | 0.40 | 1.51 | 3.81 | 0.03 | 0.77 |
| CO [g/h] | 55.38 | 631.21 | 74.27 | 46.15 | 711.87 | 41.82 | 28.12 | 105.41 | 266.62 | 2.15 | 54.02 |
| NOx [g/h] | 10.78 | 122.81 | 14.45 | 8.98 | 138.50 | 8.14 | 5.47 | 20.51 | 51.87 | 0.42 | 10.51 |
| VOC [g/h] | 12.84 | 146.29 | 17.21 | 10.70 | 164.98 | 9.69 | 6.52 | 24.43 | 61.79 | 0.50 | 12.52 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 29.76 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.250 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1038 | 1038 | 400 | 400 |
| d_b, Bicycle Delay [s] | 9.26 | 9.26 | 25.60 | 25.60 |
| l_b,int, Bicycle LOS Score for Intersection | 2.402 | 2.556 | 1.764 | 1.962 |
| Bicycle LOS | B | B | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.440 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 834 | 39 | 94 | 1165 | 20 | 15 | 21 | 8 | 98 | 22 | 92 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 834 | 39 | 94 | 1165 | 20 | 15 | 21 | 8 | 98 | 22 | 92 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 226 | 11 | 26 | 316 | 5 | 4 | 6 | 2 | 27 | 6 | 25 |
| Total Analysis Volume [veh/h] | 4 | 906 | 42 | 102 | 1265 | 22 | 16 | 23 | 9 | 106 | 24 | 100 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 110 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 39 | 0 | 25 | 54 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 1 | 76 | 76 | 8 | 83 | 83 | 9 | 9 | 9 | 9 | 9 |
| g / C, Green / Cycle | 0.01 | 0.69 | 0.69 | 0.07 | 0.76 | 0.76 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00 | 0.25 | 0.02 | 0.06 | 0.35 | 0.01 | 0.01 | 0.02 | 0.06 | 0.01 | 0.06 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 9 | 2474 | 1237 | 127 | 2724 | 1362 | 158 | 147 | 151 | 147 | 147 |
| d1, Uniform Delay [s] | 54.54 | 7.19 | 5.51 | 50.07 | 5.02 | 3.30 | 46.83 | 47.23 | 49.48 | 47.02 | 49.12 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 22.34 | 0.42 | 0.05 | 8.35 | 0.57 | 0.02 | 0.10 | 0.27 | 2.24 | 0.19 | 2.07 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.44 | 0.37 | 0.03 | 0.80 | 0.46 | 0.02 | 0.10 | 0.22 | 0.70 | 0.16 | 0.68 |
| d, Delay for Lane Group [s/veh] | 76.88 | 7.61 | 5.56 | 58.42 | 5.59 | 3.32 | 46.94 | 47.51 | 51.72 | 47.21 | 51.19 |
| Lane Group LOS | E | A | A | E | A | A | D | D | D | D | D |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.17 | 4.18 | 0.30 | 3.05 | 4.64 | 0.11 | 0.41 | 0.83 | 2.94 | 0.62 | 2.75 |
| 50th-Percentile Queue Length [ft/ln] | 4.18 | 104.40 | 7.60 | 76.25 | 116.04 | 2.73 | 10.28 | 20.80 | 73.53 | 15.51 | 68.79 |
| 95th-Percentile Queue Length [veh/ln] | 0.30 | 7.52 | 0.55 | 5.49 | 8.17 | 0.20 | 0.74 | 1.50 | 5.29 | 1.12 | 4.95 |
| 95th-Percentile Queue Length [ft/ln] | 7.53 | 187.92 | 13.68 | 137.25 | 204.37 | 4.92 | 18.51 | 37.43 | 132.36 | 27.92 | 123.82 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 76.88 | 7.61 | 5.56 | 58.42 | 5.59 | 3.32 | 46.94 | 47.51 | 47.51 | 51.72 | 47.21 | 51.19 |
| Movement LOS | E | A | A | E | A | A | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 7.81 | | | 9.44 | | | 47.32 | | | 51.02 | | |
| Approach LOS | A | | | A | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 13.19 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.440 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 0.21 | 47.33 | 2.19 | 6.70 | 83.14 | 1.45 | 0.88 | 1.77 | 3.73 | 0.85 | 3.52 |
| Stops [stops/h] | 5.47 | 273.33 | 9.95 | 99.82 | 303.81 | 3.58 | 13.46 | 27.22 | 96.26 | 20.31 | 90.05 |
| Fuel consumption [US gal/h] | 0.10 | 4.86 | 0.19 | 2.04 | 6.54 | 0.09 | 0.26 | 0.53 | 1.80 | 0.38 | 1.68 |
| CO [g/h] | 7.09 | 339.88 | 13.48 | 142.59 | 457.23 | 6.58 | 18.42 | 37.22 | 125.89 | 26.39 | 117.72 |
| NOx [g/h] | 1.38 | 66.13 | 2.62 | 27.74 | 88.96 | 1.28 | 3.58 | 7.24 | 24.49 | 5.13 | 22.90 |
| VOC [g/h] | 1.64 | 78.77 | 3.12 | 33.05 | 105.97 | 1.53 | 4.27 | 8.63 | 29.18 | 6.12 | 27.28 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 44.55 | 44.55 | 44.55 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 2.877 | 1.982 | 2.237 |
| Crosswalk LOS | F | C | A | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 573 | 845 | 745 | 745 |
| d_b, Bicycle Delay [s] | 28.01 | 18.33 | 21.64 | 21.64 |
| l_b,int, Bicycle LOS Score for Intersection | 2.345 | 2.706 | 1.639 | 1.939 |
| Bicycle LOS | B | B | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 9.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.006 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 160 | 0 | 127 | 37 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 160 | 0 | 127 | 37 | 0 |
| Peak Hour Factor | 0.7700 | 0.7700 | 0.9500 | 0.7700 | 0.7700 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 52 | 0 | 41 | 12 | 0 |
| Total Analysis Volume [veh/h] | 5 | 208 | 0 | 165 | 48 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 9.67 | 9.43 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | A | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.02 | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.49 | 19.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 9.43 | | 0.00 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.72 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 7.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.084 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 103 | 29 | 37 | 10 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 103 | 29 | 37 | 10 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.7950 | 0.7950 | 0.7950 | 0.7950 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 32 | 9 | 12 | 3 |
| Total Analysis Volume [veh/h] | 0 | 0 | 130 | 36 | 47 | 13 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 7.49 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 5.83 | 5.83 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 5.86 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.31 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 65.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.878 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 179 | 1198 | 29 | 207 | 856 | 51 | 50 | 615 | 75 | 10 | 722 | 281 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 179 | 1198 | 29 | 207 | 856 | 51 | 50 | 615 | 75 | 10 | 722 | 281 |
| Peak Hour Factor | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 314 | 8 | 54 | 225 | 13 | 13 | 161 | 20 | 3 | 189 | 74 |
| Total Analysis Volume [veh/h] | 188 | 1257 | 30 | 217 | 898 | 54 | 52 | 645 | 79 | 10 | 758 | 295 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 33 | 54 | 0 | 21 | 42 | 0 | 10 | 45 | 0 | 10 | 45 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 16 | 47 | 47 | 16 | 46 | 46 | 5 | 41 | 41 | 2 | 38 | 38 |
| g / C, Green / Cycle | 0.13 | 0.36 | 0.36 | 0.13 | 0.36 | 0.36 | 0.04 | 0.32 | 0.32 | 0.01 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.11 | 0.36 | 0.36 | 0.13 | 0.27 | 0.26 | 0.03 | 0.20 | 0.20 | 0.01 | 0.31 | 0.28 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 215 | 644 | 644 | 213 | 642 | 642 | 66 | 571 | 571 | 21 | 523 | 523 |
| d1, Uniform Delay [s] | 55.80 | 41.75 | 41.67 | 56.85 | 36.68 | 36.42 | 61.95 | 38.12 | 37.77 | 63.81 | 46.12 | 45.33 |
| k, delay calibration | 0.08 | 0.42 | 0.42 | 0.09 | 0.26 | 0.25 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 8.29 | 33.24 | 31.64 | 30.24 | 4.12 | 3.70 | 14.27 | 5.56 | 5.05 | 12.55 | 55.06 | 30.14 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.88 | 1.00 | 1.00 | 1.02 | 0.75 | 0.73 | 0.79 | 0.65 | 0.62 | 0.49 | 1.06 | 0.96 |
| d, Delay for Lane Group [s/veh] | 64.09 | 74.99 | 73.31 | 87.09 | 40.79 | 40.12 | 76.22 | 43.68 | 42.82 | 76.36 | 101.18 | 75.47 |
| Lane Group LOS | E | F | E | F | D | D | E | D | D | E | F | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 6.27 | 24.94 | 24.54 | 8.45 | 13.17 | 12.77 | 1.91 | 10.45 | 9.93 | 0.39 | 23.91 | 19.36 |
| 50th-Percentile Queue Length [ft/ln] | 156.71 | 623.41 | 613.61 | 211.30 | 329.15 | 319.28 | 47.68 | 261.17 | 248.35 | 9.76 | 597.87 | 484.01 |
| 95th-Percentile Queue Length [veh/ln] | 10.37 | 33.19 | 32.67 | 13.32 | 19.12 | 18.63 | 3.43 | 15.75 | 15.10 | 0.70 | 33.08 | 26.58 |
| 95th-Percentile Queue Length [ft/ln] | 259.36 | 829.64 | 816.74 | 333.04 | 477.91 | 465.80 | 85.83 | 393.69 | 377.57 | 17.56 | 826.99 | 664.41 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 64.09 | 74.17 | 73.31 | 87.09 | 40.48 | 40.12 | 76.22 | 43.31 | 42.82 | 76.36 | 94.20 | 75.47 |
| Movement LOS | E | E | E | F | D | D | E | D | D | E | F | E |
| d_A, Approach Delay [s/veh] | 72.87 | | | 49.12 | | | 45.46 | | | 88.84 | | |
| Approach LOS | E | | | D | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 65.72 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.878 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 12.03 | 41.31 | 41.06 | 12.49 | 27.65 | 27.13 | 4.86 | 34.46 | 33.21 | 0.64 | 35.21 | 31.92 |
| Stops [stops/h] | 173.59 | 690.55 | 679.70 | 234.05 | 364.59 | 353.67 | 52.82 | 289.29 | 275.09 | 10.81 | 662.26 | 536.13 |
| Fuel consumption [US gal/h] | 6.70 | 26.53 | 26.00 | 9.45 | 12.99 | 12.59 | 1.95 | 9.80 | 9.32 | 0.38 | 24.85 | 18.72 |
| CO [g/h] | 468.34 | 1854.15 | 1817.25 | 660.25 | 908.25 | 880.33 | 136.32 | 685.23 | 651.21 | 26.38 | 1736.97 | 1308.20 |
| NOx [g/h] | 91.12 | 360.75 | 353.57 | 128.46 | 176.71 | 171.28 | 26.52 | 133.32 | 126.70 | 5.13 | 337.95 | 254.53 |
| VOC [g/h] | 108.54 | 429.72 | 421.16 | 153.02 | 210.50 | 204.02 | 31.59 | 158.81 | 150.92 | 6.11 | 402.56 | 303.19 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 715 | 531 | 577 | 577 |
| d_b, Bicycle Delay [s] | 26.82 | 35.08 | 32.91 | 32.91 |
| l_b,int, Bicycle LOS Score for Intersection | 2.776 | 2.524 | 2.200 | 2.437 |
| Bicycle LOS | C | B | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 77.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.074 |

**Intersection Setup**

| Name | U.S. Route 395 | | U.S. Route 395 | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 13.00 | 12.00 | 12.00 | 13.00 | 20.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 1 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | 60.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | U.S. Route 395 | | U.S. Route 395 | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1384 | 39 | 20 | 922 | 4 | 21 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1384 | 39 | 20 | 922 | 4 | 21 |
| Peak Hour Factor | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 355 | 10 | 5 | 236 | 1 | 5 |
| Total Analysis Volume [veh/h] | 1418 | 40 | 20 | 945 | 4 | 22 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.04 | 0.01 | 0.07 | 0.06 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 13.19 | 0.00 | 77.15 | 15.49 |
| Movement LOS | A | A | B | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.14 | 0.00 | 0.23 | 0.19 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 3.40 | 0.00 | 5.80 | 4.78 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.27 | | 24.97 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.37 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 9.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.028 |

**Intersection Setup**

| Name | Three Flags Avenue | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 1 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | Three Flags Avenue | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 22 | 74 | 39 | 18 | 30 | 11 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 22 | 74 | 39 | 18 | 30 | 11 |
| Peak Hour Factor | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 6 | 20 | 11 | 5 | 8 | 3 |
| Total Analysis Volume [veh/h] | 24 | 82 | 43 | 20 | 33 | 12 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.08 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 9.72 | 9.00 | 0.00 | 0.00 | 7.38 | 0.00 |
| Movement LOS | A | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.37 | 0.37 | 0.00 | 0.00 | 0.06 | 0.06 |
| 95th-Percentile Queue Length [ft/ln] | 9.17 | 9.17 | 0.00 | 0.00 | 1.40 | 1.40 |
| d_A, Approach Delay [s/veh] | 9.17 | | 0.00 | | 5.41 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 5.68 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 12.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.513 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 36 | 1307 | 159 | 36 | 822 | 61 | 38 | 1 | 64 | 138 | 4 | 35 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 36 | 1307 | 159 | 36 | 822 | 61 | 38 | 1 | 64 | 138 | 4 | 35 |
| Peak Hour Factor | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 333 | 40 | 9 | 209 | 16 | 10 | 0 | 16 | 35 | 1 | 9 |
| Total Analysis Volume [veh/h] | 37 | 1331 | 162 | 37 | 837 | 62 | 39 | 1 | 65 | 141 | 4 | 36 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 80 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 50 | 0 | 10 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 51 | 51 | 3 | 51 | 51 | 8 | 8 | 8 | 8 | 8 |
| g / C, Green / Cycle | 0.04 | 0.64 | 0.64 | 0.04 | 0.64 | 0.64 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.37 | 0.09 | 0.02 | 0.23 | 0.03 | 0.02 | 0.04 | 0.08 | 0.00 | 0.02 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 61 | 2301 | 1151 | 61 | 2301 | 1151 | 233 | 191 | 179 | 191 | 191 |
| d1, Uniform Delay [s] | 38.01 | 8.26 | 5.72 | 38.01 | 6.78 | 5.39 | 32.71 | 33.18 | 34.85 | 32.03 | 32.61 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.57 | 1.07 | 0.26 | 3.57 | 0.45 | 0.09 | 0.12 | 0.40 | 2.88 | 0.02 | 0.18 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.61 | 0.58 | 0.14 | 0.61 | 0.36 | 0.05 | 0.17 | 0.35 | 0.79 | 0.02 | 0.19 |
| d, Delay for Lane Group [s/veh] | 41.58 | 9.33 | 5.98 | 41.58 | 7.23 | 5.48 | 32.83 | 33.57 | 37.73 | 32.05 | 32.79 |
| Lane Group LOS | D | A | A | D | A | A | C | C | D | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.71 | 4.29 | 0.75 | 0.71 | 2.18 | 0.27 | 0.67 | 1.15 | 2.69 | 0.07 | 0.62 |
| 50th-Percentile Queue Length [ft/ln] | 17.76 | 107.31 | 18.70 | 17.76 | 54.58 | 6.72 | 16.71 | 28.86 | 67.17 | 1.68 | 15.42 |
| 95th-Percentile Queue Length [veh/ln] | 1.28 | 7.69 | 1.35 | 1.28 | 3.93 | 0.48 | 1.20 | 2.08 | 4.84 | 0.12 | 1.11 |
| 95th-Percentile Queue Length [ft/ln] | 31.98 | 192.26 | 33.66 | 31.98 | 98.25 | 12.09 | 30.08 | 51.95 | 120.90 | 3.02 | 27.76 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 41.58 | 9.33 | 5.98 | 41.58 | 7.23 | 5.48 | 32.83 | 33.57 | 33.57 | 37.73 | 32.05 | 32.79 |
| Movement LOS | D | A | A | D | A | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 9.75 | | | 8.47 | | | 33.30 | | | 36.62 | | |
| Approach LOS | A | | | A | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 11.98 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.513 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.93 | 105.48 | 12.84 | 0.87 | 19.77 | 1.46 | 1.68 | 2.84 | 8.74 | 0.25 | 2.23 |
| Stops [stops/h] | 31.98 | 386.33 | 33.66 | 31.98 | 196.50 | 12.09 | 30.08 | 51.95 | 120.90 | 3.02 | 27.76 |
| Fuel consumption [US gal/h] | 1.12 | 14.67 | 1.38 | 1.05 | 6.25 | 0.39 | 0.62 | 1.06 | 2.58 | 0.06 | 0.59 |
| CO [g/h] | 78.30 | 1025.51 | 96.46 | 73.38 | 436.94 | 27.02 | 43.06 | 74.29 | 180.55 | 4.52 | 41.44 |
| NOx [g/h] | 15.23 | 199.53 | 18.77 | 14.28 | 85.01 | 5.26 | 8.38 | 14.46 | 35.13 | 0.88 | 8.06 |
| VOC [g/h] | 18.15 | 237.67 | 22.36 | 17.01 | 101.27 | 6.26 | 9.98 | 17.22 | 41.85 | 1.05 | 9.60 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 29.76 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.248 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1088 | 1088 | 350 | 350 |
| d_b, Bicycle Delay [s] | 8.33 | 8.33 | 27.23 | 27.23 |
| l_b,int, Bicycle LOS Score for Intersection | 2.822 | 2.332 | 1.733 | 1.858 |
| Bicycle LOS | C | B | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 15.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.548 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 20 | 1326 | 95 | 104 | 903 | 17 | 56 | 50 | 3 | 75 | 10 | 121 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 20 | 1326 | 95 | 104 | 903 | 17 | 56 | 50 | 3 | 75 | 10 | 121 |
| Peak Hour Factor | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 5 | 345 | 25 | 27 | 235 | 4 | 15 | 13 | 1 | 19 | 3 | 31 |
| Total Analysis Volume [veh/h] | 21 | 1378 | 99 | 108 | 939 | 18 | 58 | 52 | 3 | 78 | 10 | 126 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 105 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 39 | 0 | 20 | 49 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 2 | 70 | 70 | 8 | 76 | 76 | 9 | 9 | 9 | 9 | 9 |
| g / C, Green / Cycle | 0.02 | 0.67 | 0.67 | 0.08 | 0.72 | 0.72 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.38 | 0.06 | 0.06 | 0.26 | 0.01 | 0.03 | 0.03 | 0.05 | 0.01 | 0.07 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 37 | 2400 | 1200 | 134 | 2605 | 1302 | 190 | 163 | 152 | 163 | 163 |
| d1, Uniform Delay [s] | 50.84 | 9.46 | 6.18 | 47.55 | 5.43 | 4.05 | 44.95 | 44.78 | 45.50 | 43.66 | 46.68 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.38 | 1.01 | 0.13 | 8.07 | 0.39 | 0.02 | 0.33 | 0.45 | 0.99 | 0.06 | 2.92 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.56 | 0.57 | 0.08 | 0.80 | 0.36 | 0.01 | 0.30 | 0.34 | 0.51 | 0.06 | 0.77 |
| d, Delay for Lane Group [s/veh] | 60.22 | 10.46 | 6.31 | 55.62 | 5.82 | 4.07 | 45.28 | 45.23 | 46.49 | 43.72 | 49.61 |
| Lane Group LOS | E | B | A | E | A | A | D | D | D | D | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 0.64 | 7.94 | 0.76 | 3.07 | 3.41 | 0.10 | 1.44 | 1.36 | 1.98 | 0.24 | 3.34 |
| 50th-Percentile Queue Length [ft/ln] | 16.07 | 198.57 | 18.97 | 76.68 | 85.37 | 2.52 | 35.96 | 34.07 | 49.40 | 6.01 | 83.45 |
| 95th-Percentile Queue Length [veh/ln] | 1.16 | 12.56 | 1.37 | 5.52 | 6.15 | 0.18 | 2.59 | 2.45 | 3.56 | 0.43 | 6.01 |
| 95th-Percentile Queue Length [ft/ln] | 28.93 | 314.12 | 34.15 | 138.02 | 153.67 | 4.53 | 64.73 | 61.32 | 88.93 | 10.82 | 150.21 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 60.22 | 10.46 | 6.31 | 55.62 | 5.82 | 4.07 | 45.28 | 45.23 | 45.23 | 46.49 | 43.72 | 49.61 |
| Movement LOS | E | B | A | E | A | A | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 10.89 | | | 10.84 | | | 45.26 | | | 48.20 | | |
| Approach LOS | B | | | B | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 14.98 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.548 | | | | | | | | | | | |

**Emissions**

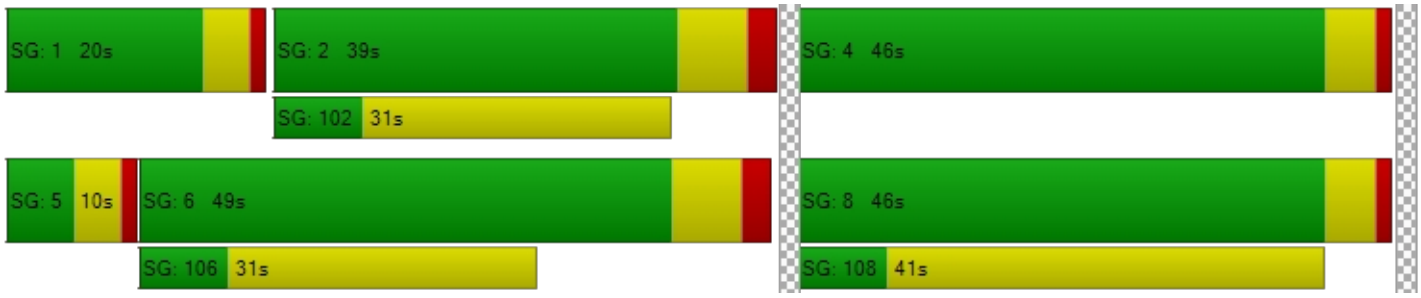
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.10 | 71.99 | 5.17 | 7.10 | 61.72 | 1.18 | 3.20 | 3.04 | 2.75 | 0.35 | 4.44 |
| Stops [stops/h] | 22.04 | 544.65 | 26.02 | 105.16 | 234.16 | 3.45 | 49.32 | 46.72 | 67.75 | 8.25 | 114.45 |
| Fuel consumption [US gal/h] | 0.42 | 8.91 | 0.48 | 2.10 | 4.95 | 0.08 | 0.94 | 0.89 | 1.23 | 0.15 | 2.09 |
| CO [g/h] | 29.66 | 622.61 | 33.82 | 146.48 | 345.74 | 5.78 | 65.62 | 62.17 | 85.65 | 10.42 | 145.87 |
| NOx [g/h] | 5.77 | 121.14 | 6.58 | 28.50 | 67.27 | 1.12 | 12.77 | 12.10 | 16.67 | 2.03 | 28.38 |
| VOC [g/h] | 6.87 | 144.30 | 7.84 | 33.95 | 80.13 | 1.34 | 15.21 | 14.41 | 19.85 | 2.41 | 33.81 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 42.08 | 42.08 | 42.08 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 2.970 | 2.000 | 2.254 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 600 | 790 | 781 | 781 |
| d_b, Bicycle Delay [s] | 25.73 | 19.20 | 19.50 | 19.50 |
| l_b,int, Bicycle LOS Score for Intersection | 2.795 | 2.438 | 1.746 | 1.913 |
| Bicycle LOS | C | B | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.024 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 15 | 178 | 0 | 213 | 37 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 15 | 178 | 0 | 213 | 37 | 0 |
| Peak Hour Factor | 0.8670 | 0.8670 | 0.9500 | 0.8670 | 0.8670 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 51 | 0 | 61 | 11 | 0 |
| Total Analysis Volume [veh/h] | 17 | 205 | 0 | 246 | 43 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 10.26 | 9.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.07 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.86 | 18.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 9.44 | | 0.00 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.10 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 7.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.101 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 148 | 117 | 37 | 6 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 148 | 117 | 37 | 6 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9390 | 0.9390 | 0.9390 | 0.9390 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 39 | 31 | 10 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 158 | 125 | 39 | 6 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 7.50 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.29 | 0.29 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 7.21 | 7.21 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 4.18 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 3.61 | | | | | |
| Intersection LOS | A | | | | | |

# Appendix D

Project Opening Year (2026)

Without Project Conditions

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 169.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.155 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 209 | 1008 | 11 | 397 | 1261 | 44 | 65 | 908 | 212 | 12 | 1178 | 565 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 209 | 1008 | 11 | 397 | 1261 | 44 | 65 | 908 | 212 | 12 | 1178 | 565 |
| Peak Hour Factor | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 261 | 3 | 103 | 327 | 11 | 17 | 235 | 55 | 3 | 305 | 146 |
| Total Analysis Volume [veh/h] | 217 | 1045 | 11 | 411 | 1307 | 46 | 67 | 941 | 220 | 12 | 1221 | 585 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 17 | 36 | 0 | 28 | 47 | 0 | 10 | 46 | 0 | 20 | 56 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 12 | 29 | 29 | 23 | 40 | 40 | 5 | 52 | 52 | 2 | 49 | 49 |
| g / C, Green / Cycle | 0.09 | 0.22 | 0.22 | 0.18 | 0.30 | 0.30 | 0.04 | 0.40 | 0.40 | 0.01 | 0.37 | 0.37 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.29 | 0.29 | 0.24 | 0.38 | 0.38 | 0.04 | 0.33 | 0.31 | 0.01 | 0.51 | 0.49 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 161 | 395 | 395 | 305 | 547 | 547 | 69 | 719 | 719 | 24 | 672 | 672 |
| d1, Uniform Delay [s] | 58.85 | 50.75 | 50.75 | 53.35 | 45.25 | 45.25 | 62.26 | 35.12 | 34.09 | 63.60 | 40.75 | 40.75 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.47 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 163.75 | 169.35 | 167.48 | 176.05 | 122.71 | 120.64 | 35.72 | 10.87 | 8.28 | 10.95 | 173.10 | 156.80 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.35 | 1.34 | 1.34 | 1.35 | 1.24 | 1.23 | 0.97 | 0.83 | 0.78 | 0.49 | 1.36 | 1.33 |
| d, Delay for Lane Group [s/veh] | 222.60 | 220.10 | 218.23 | 229.40 | 167.96 | 165.89 | 97.98 | 45.98 | 42.37 | 74.55 | 213.85 | 197.55 |
| Lane Group LOS | F | F | F | F | F | F | F | D | D | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 12.37 | 30.67 | 30.46 | 24.33 | 35.05 | 34.74 | 2.82 | 18.00 | 16.09 | 0.46 | 52.23 | 49.19 |
| 50th-Percentile Queue Length [ft/ln] | 309.25 | 766.65 | 761.51 | 608.13 | 876.34 | 868.48 | 70.58 | 449.95 | 402.30 | 11.40 | 1305.84 | 1229.82 |
| 95th-Percentile Queue Length [veh/ln] | 20.07 | 45.95 | 45.61 | 37.10 | 50.85 | 50.33 | 5.08 | 24.96 | 22.67 | 0.82 | 77.26 | 72.19 |
| 95th-Percentile Queue Length [ft/ln] | 501.67 | 1148.65 | 1140.30 | 927.39 | 1271.15 | 1258.36 | 127.05 | 623.89 | 566.77 | 20.52 | 1931.41 | 1804.71 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 222.60 | 219.17 | 218.23 | 229.40 | 166.96 | 165.89 | 97.98 | 44.67 | 42.37 | 74.55 | 209.78 | 197.55 |
| Movement LOS | F | F | F | F | F | F | F | D | D | E | F | F |
| d_A, Approach Delay [s/veh] | 219.75 | | | 181.48 | | | 47.17 | | | 204.95 | | |
| Approach LOS | F | | | F | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 169.39 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.155 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 33.85 | 33.74 | 23.65 | 39.01 | 38.85 | 6.26 | 55.95 | 52.57 | 0.77 | 58.38 | 56.76 |
| Stops [stops/h] | 342.55 | 849.21 | 843.52 | 673.63 | 970.72 | 962.01 | 78.18 | 498.41 | 445.63 | 12.63 | 1446.47 | 1362.26 |
| Fuel consumption [US gal/h] | 17.87 | 43.61 | 43.20 | 34.88 | 45.96 | 45.38 | 3.00 | 16.73 | 14.89 | 0.44 | 68.66 | 62.99 |
| CO [g/h] | 1249.45 | 3048.55 | 3019.92 | 2438.21 | 3212.32 | 3172.04 | 209.52 | 1169.42 | 1040.49 | 30.90 | 4799.47 | 4402.83 |
| NOx [g/h] | 243.10 | 593.14 | 587.57 | 474.39 | 625.00 | 617.16 | 40.77 | 227.53 | 202.44 | 6.01 | 933.80 | 856.63 |
| VOC [g/h] | 289.57 | 706.53 | 699.90 | 565.08 | 744.49 | 735.15 | 48.56 | 271.02 | 241.14 | 7.16 | 1112.32 | 1020.40 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 438 | 608 | 592 | 746 |
| d_b, Bicycle Delay [s] | 39.62 | 31.50 | 32.20 | 25.55 |
| l_b,int, Bicycle LOS Score for Intersection | 2.610 | 3.015 | 2.573 | 3.059 |
| Bicycle LOS | B | C | B | C |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 30.866 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1194 | 550 | 112 | 1133 | 29 | 5 | 0 | 29 | 119 | 0 | 25 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1194 | 550 | 112 | 1133 | 29 | 5 | 0 | 29 | 119 | 0 | 25 |
| Peak Hour Factor | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 336 | 155 | 32 | 319 | 8 | 1 | 0 | 8 | 34 | 0 | 7 |
| Total Analysis Volume [veh/h] | 80 | 1345 | 619 | 126 | 1276 | 33 | 6 | 0 | 33 | 134 | 0 | 28 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.15 | 0.01 | 0.01 | 0.43 | 0.01 | 0.00 | 0.77 | 0.00 | 0.08 | 30.87 | 0.00 | 0.11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 13.10 | 0.00 | 0.00 | 26.33 | 0.00 | 0.00 | 823.38 | 1575.66 | 14.57 | 10000.0 | 1002.24 | 21.34 |
| Movement LOS | B | A | A | D | A | A | F | F | B | F | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.53 | 0.00 | 0.00 | 2.07 | 0.00 | 0.00 | 1.39 | 0.26 | 0.26 | 18.87 | 0.38 | 0.38 |
| 95th-Percentile Queue Length [ft/ln] | 13.37 | 0.00 | 0.00 | 51.69 | 0.00 | 0.00 | 34.86 | 6.55 | 6.55 | 471.76 | 9.41 | 9.41 |
| d_A, Approach Delay [s/veh] | 0.51 | | | 2.31 | | | 139.01 | | | 8275.29 | | |
| Approach LOS | A | | | A | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 366.95 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 127.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.567 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 20 | 0 | 42 | 0 | 0 | 41 | 156 | 418 | 40 | 132 | 187 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 20 | 0 | 42 | 0 | 0 | 41 | 156 | 418 | 40 | 132 | 187 | 0 |
| Peak Hour Factor | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 14 | 0 | 0 | 14 | 52 | 139 | 13 | 44 | 62 | 0 |
| Total Analysis Volume [veh/h] | 27 | 0 | 56 | 0 | 0 | 55 | 208 | 557 | 53 | 176 | 249 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.57 | 0.00 | 0.11 | 0.00 | 0.00 | 0.07 | 0.16 | 0.01 | 0.00 | 0.18 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 127.21 | 108.30 | 58.59 | 88.02 | 64.25 | 9.90 | 8.01 | 0.00 | 0.00 | 8.93 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | A | A | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 3.63 | 3.63 | 3.63 | 0.22 | 0.22 | 0.22 | 0.40 | 0.40 | 0.40 | 0.32 | 0.32 | 0.32 |
| 95th-Percentile Queue Length [ft/ln] | 90.67 | 90.67 | 90.67 | 5.60 | 5.60 | 5.60 | 9.97 | 9.97 | 9.97 | 8.12 | 8.12 | 8.12 |
| d_A, Approach Delay [s/veh] | 80.91 | | | 9.90 | | | 2.04 | | | 3.70 | | |
| Approach LOS | F | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 7.60 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 23.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.780 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1725 | 191 | 22 | 1372 | 81 | 26 | 1 | 92 | 308 | 2 | 47 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 25 | 1725 | 191 | 22 | 1372 | 81 | 26 | 1 | 92 | 308 | 2 | 47 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 468 | 52 | 6 | 372 | 22 | 7 | 0 | 25 | 84 | 1 | 13 |
| Total Analysis Volume [veh/h] | 27 | 1873 | 207 | 24 | 1490 | 88 | 28 | 1 | 100 | 334 | 2 | 51 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 95 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 48 | 0 | 10 | 48 | 0 | 0 | 37 | 0 | 0 | 37 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 55 | 55 | 2 | 54 | 54 | 20 | 20 | 20 | 20 | 20 |
| g / C, Green / Cycle | 0.03 | 0.58 | 0.58 | 0.03 | 0.57 | 0.57 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.52 | 0.12 | 0.01 | 0.41 | 0.05 | 0.02 | 0.06 | 0.20 | 0.00 | 0.03 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 47 | 2067 | 1034 | 43 | 2060 | 1030 | 415 | 389 | 341 | 389 | 389 |
| d1, Uniform Delay [s] | 45.64 | 17.94 | 9.73 | 45.75 | 14.83 | 9.14 | 29.69 | 30.94 | 36.34 | 29.23 | 30.05 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.07 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.07 | 7.17 | 0.44 | 4.02 | 2.24 | 0.16 | 0.03 | 0.13 | 14.31 | 0.00 | 0.06 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.57 | 0.91 | 0.20 | 0.55 | 0.72 | 0.09 | 0.07 | 0.26 | 0.98 | 0.01 | 0.13 |
| d, Delay for Lane Group [s/veh] | 49.71 | 25.11 | 10.16 | 49.77 | 17.07 | 9.30 | 29.72 | 31.07 | 50.66 | 29.24 | 30.11 |
| Lane Group LOS | D | C | B | D | B | A | C | C | D | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.64 | 15.64 | 1.75 | 0.57 | 9.56 | 0.70 | 0.50 | 1.87 | 8.57 | 0.03 | 0.92 |
| 50th-Percentile Queue Length [ft/ln] | 16.02 | 391.11 | 43.82 | 14.28 | 238.95 | 17.39 | 12.43 | 46.81 | 214.33 | 0.87 | 22.94 |
| 95th-Percentile Queue Length [veh/ln] | 1.15 | 22.13 | 3.15 | 1.03 | 14.63 | 1.25 | 0.90 | 3.37 | 13.38 | 0.06 | 1.65 |
| 95th-Percentile Queue Length [ft/ln] | 28.84 | 553.28 | 78.87 | 25.71 | 365.70 | 31.31 | 22.38 | 84.26 | 334.38 | 1.57 | 41.29 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 49.71 | 25.11 | 10.16 | 49.77 | 17.07 | 9.30 | 29.72 | 31.07 | 31.07 | 50.66 | 29.24 | 30.11 |
| Movement LOS | D | C | B | D | B | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 23.96 | | | 17.14 | | | 30.77 | | | 47.84 | | |
| Approach LOS | C | | | B | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 23.77 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.780 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.14 | 148.43 | 16.40 | 0.57 | 35.20 | 2.08 | 1.20 | 4.34 | 20.69 | 0.12 | 3.16 |
| Stops [stops/h] | 24.28 | 1185.69 | 66.42 | 21.65 | 724.38 | 26.36 | 18.85 | 70.96 | 324.89 | 1.33 | 34.77 |
| Fuel consumption [US gal/h] | 0.88 | 40.85 | 2.46 | 0.74 | 22.39 | 0.82 | 0.40 | 1.49 | 7.38 | 0.03 | 0.77 |
| CO [g/h] | 61.72 | 2855.75 | 171.74 | 51.80 | 1565.23 | 57.34 | 27.79 | 104.22 | 515.55 | 2.05 | 53.63 |
| NOx [g/h] | 12.01 | 555.62 | 33.41 | 10.08 | 304.54 | 11.16 | 5.41 | 20.28 | 100.31 | 0.40 | 10.43 |
| VOC [g/h] | 14.31 | 661.85 | 39.80 | 12.00 | 362.76 | 13.29 | 6.44 | 24.16 | 119.48 | 0.48 | 12.43 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 37.14 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.335 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 874 | 874 | 653 | 653 |
| d_b, Bicycle Delay [s] | 15.06 | 15.06 | 21.56 | 21.56 |
| l_b,int, Bicycle LOS Score for Intersection | 3.298 | 2.881 | 1.772 | 2.198 |
| Bicycle LOS | C | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 53.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.919 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1413 | 41 | 228 | 1376 | 169 | 57 | 71 | 17 | 102 | 217 | 505 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1413 | 41 | 228 | 1376 | 169 | 57 | 71 | 17 | 102 | 217 | 505 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 384 | 11 | 62 | 374 | 46 | 15 | 19 | 5 | 28 | 59 | 137 |
| Total Analysis Volume [veh/h] | 40 | 1534 | 45 | 248 | 1494 | 183 | 62 | 77 | 18 | 111 | 236 | 548 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 12 | 61 | 0 | 23 | 72 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 54 | 54 | 18 | 68 | 68 | 41 | 41 | 41 | 41 | 41 |
| g / C, Green / Cycle | 0.03 | 0.41 | 0.41 | 0.14 | 0.52 | 0.52 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.43 | 0.03 | 0.15 | 0.42 | 0.10 | 0.04 | 0.05 | 0.07 | 0.13 | 0.30 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 52 | 1482 | 741 | 239 | 1880 | 940 | 390 | 567 | 500 | 567 | 567 |
| d1, Uniform Delay [s] | 62.58 | 38.24 | 23.07 | 55.85 | 25.38 | 16.53 | 31.64 | 32.18 | 32.61 | 35.08 | 43.83 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.36 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.41 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 16.42 | 32.90 | 0.16 | 59.21 | 3.57 | 0.46 | 0.07 | 0.05 | 0.08 | 0.18 | 26.72 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 1.03 | 0.06 | 1.04 | 0.79 | 0.19 | 0.16 | 0.17 | 0.22 | 0.42 | 0.97 |
| d, Delay for Lane Group [s/veh] | 79.00 | 71.14 | 23.23 | 115.06 | 28.95 | 16.99 | 31.71 | 32.23 | 32.69 | 35.26 | 70.55 |
| Lane Group LOS | E | F | C | F | C | B | C | C | C | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.55 | 29.90 | 0.88 | 11.77 | 19.27 | 3.05 | 1.41 | 2.20 | 2.61 | 5.96 | 21.42 |
| 50th-Percentile Queue Length [ft/ln] | 38.81 | 747.56 | 21.99 | 294.36 | 481.72 | 76.15 | 35.33 | 54.97 | 65.14 | 149.05 | 535.56 |
| 95th-Percentile Queue Length [veh/ln] | 2.79 | 39.89 | 1.58 | 17.69 | 26.47 | 5.48 | 2.54 | 3.96 | 4.69 | 9.97 | 29.01 |
| 95th-Percentile Queue Length [ft/ln] | 69.87 | 997.18 | 39.58 | 442.35 | 661.70 | 137.07 | 63.60 | 98.95 | 117.25 | 249.16 | 725.33 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 79.00 | 71.14 | 23.23 | 115.06 | 28.95 | 16.99 | 31.71 | 32.23 | 32.23 | 32.69 | 35.26 | 70.55 |
| Movement LOS | E | F | C | F | C | B | C | C | C | C | D | E |
| d_A, Approach Delay [s/veh] | 70.00 | | | 38.91 | | | 32.02 | | | 56.55 | | |
| Approach LOS | E | | | D | | | C | | | E | | |
| d_I, Intersection Delay [s/veh] | 53.06 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.919 | | | | | | | | | | | |

**Emissions**

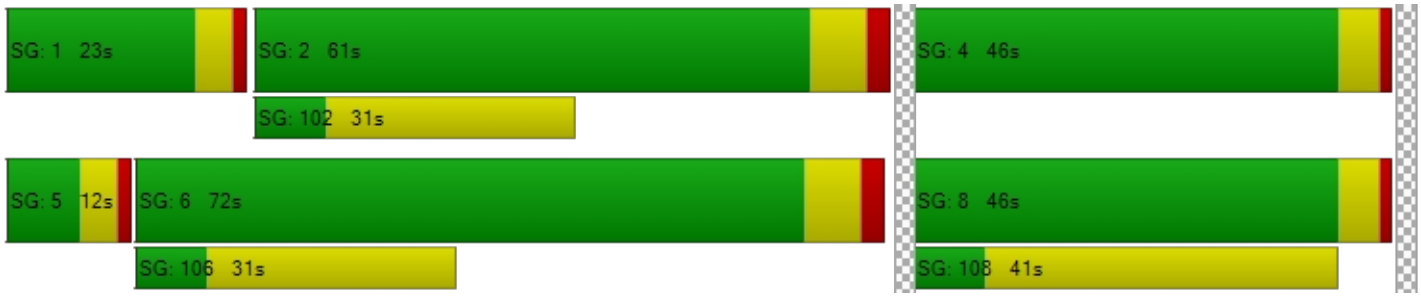
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.09 | 80.13 | 2.35 | 16.30 | 98.20 | 12.03 | 3.43 | 5.25 | 3.91 | 8.31 | 19.31 |
| Stops [stops/h] | 42.99 | 1656.14 | 24.36 | 326.06 | 1067.20 | 84.35 | 39.14 | 60.90 | 72.16 | 165.10 | 593.24 |
| Fuel consumption [US gal/h] | 0.97 | 34.65 | 0.44 | 8.28 | 18.74 | 1.59 | 0.76 | 1.18 | 1.30 | 2.95 | 11.94 |
| CO [g/h] | 67.56 | 2422.26 | 31.04 | 578.67 | 1309.93 | 111.41 | 52.93 | 82.17 | 90.74 | 206.06 | 834.52 |
| NOx [g/h] | 13.14 | 471.28 | 6.04 | 112.59 | 254.87 | 21.68 | 10.30 | 15.99 | 17.65 | 40.09 | 162.37 |
| VOC [g/h] | 15.66 | 561.38 | 7.19 | 134.11 | 303.59 | 25.82 | 12.27 | 19.04 | 21.03 | 47.76 | 193.41 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.220 | 2.158 | 2.457 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 823 | 992 | 631 | 631 |
| d_b, Bicycle Delay [s] | 22.51 | 16.50 | 30.47 | 30.47 |
| l_b,int, Bicycle LOS Score for Intersection | 2.895 | 3.148 | 1.819 | 3.036 |
| Bicycle LOS | C | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 56.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.010 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 12 | 640 | 0 | 311 | 167 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 12 | 640 | 0 | 311 | 167 | 0 |
| Peak Hour Factor | 0.7700 | 0.7700 | 0.9500 | 0.7700 | 0.7700 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 208 | 0 | 101 | 54 | 0 |
| Total Analysis Volume [veh/h] | 16 | 831 | 0 | 404 | 217 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.04 | 1.01 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 13.28 | 56.26 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | F | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.11 | 18.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.75 | 454.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 55.45 | | 0.00 | | 0.00 | |
| Approach LOS | F | | A | | A | |
| d_I, Intersection Delay [s/veh] | 31.99 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 8.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.247 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 255 | 69 | 167 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 255 | 69 | 167 | 43 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.7950 | 0.7950 | 0.7950 | 0.7950 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 80 | 22 | 53 | 14 |
| Total Analysis Volume [veh/h] | 0 | 0 | 321 | 87 | 210 | 54 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 8.36 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.77 | 0.77 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 19.14 | 19.14 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 6.57 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 3.99 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 253.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.369 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 274 | 1438 | 37 | 627 | 1099 | 64 | 63 | 1318 | 191 | 14 | 967 | 448 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 274 | 1438 | 37 | 627 | 1099 | 64 | 63 | 1318 | 191 | 14 | 967 | 448 |
| Peak Hour Factor | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 72 | 377 | 10 | 164 | 288 | 17 | 17 | 346 | 50 | 4 | 254 | 118 |
| Total Analysis Volume [veh/h] | 288 | 1509 | 39 | 658 | 1153 | 67 | 66 | 1383 | 200 | 15 | 1015 | 470 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 24 | 42 | 0 | 35 | 53 | 0 | 10 | 43 | 0 | 10 | 43 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 19 | 35 | 35 | 30 | 46 | 46 | 5 | 39 | 39 | 2 | 36 | 36 |
| g / C, Green / Cycle | 0.15 | 0.27 | 0.27 | 0.23 | 0.35 | 0.35 | 0.04 | 0.30 | 0.30 | 0.02 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.17 | 0.43 | 0.43 | 0.39 | 0.34 | 0.34 | 0.04 | 0.44 | 0.43 | 0.01 | 0.43 | 0.40 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 252 | 478 | 478 | 396 | 630 | 630 | 69 | 535 | 535 | 29 | 492 | 492 |
| d1, Uniform Delay [s] | 55.35 | 47.75 | 47.75 | 49.85 | 41.57 | 41.51 | 62.22 | 45.70 | 45.70 | 63.39 | 47.25 | 47.25 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.40 | 0.40 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 71.69 | 289.33 | 287.97 | 308.30 | 25.46 | 24.92 | 32.84 | 233.67 | 218.72 | 10.54 | 266.30 | 214.09 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.14 | 1.62 | 1.62 | 1.66 | 0.97 | 0.97 | 0.95 | 1.50 | 1.46 | 0.52 | 1.57 | 1.45 |
| d, Delay for Lane Group [s/veh] | 127.04 | 337.08 | 335.72 | 358.15 | 67.03 | 66.43 | 95.07 | 279.36 | 264.42 | 73.93 | 313.55 | 261.34 |
| Lane Group LOS | F | F | F | F | E | E | F | F | F | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 12.88 | 52.88 | 52.70 | 46.05 | 22.23 | 22.06 | 2.73 | 50.93 | 48.72 | 0.56 | 51.39 | 44.26 |
| 50th-Percentile Queue Length [ft/ln] | 322.01 | 1321.96 | 1317.46 | 1151.15 | 555.71 | 551.56 | 68.37 | 1273.36 | 1217.89 | 14.01 | 1284.77 | 1106.58 |
| 95th-Percentile Queue Length [veh/ln] | 19.91 | 81.22 | 80.92 | 71.28 | 29.96 | 29.77 | 4.92 | 77.18 | 73.49 | 1.01 | 78.54 | 66.75 |
| 95th-Percentile Queue Length [ft/ln] | 497.67 | 2030.39 | 2022.97 | 1782.03 | 749.01 | 744.14 | 123.06 | 1929.44 | 1837.29 | 25.22 | 1963.47 | 1668.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 127.04 | 336.42 | 335.72 | 358.15 | 66.75 | 66.43 | 95.07 | 273.07 | 264.42 | 73.93 | 301.04 | 261.34 |
| Movement LOS | F | F | F | F | E | E | F | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 303.56 | | | 168.84 | | | 264.90 | | | 286.33 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 253.64 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.369 | | | | | | | | | | | |

**Emissions**

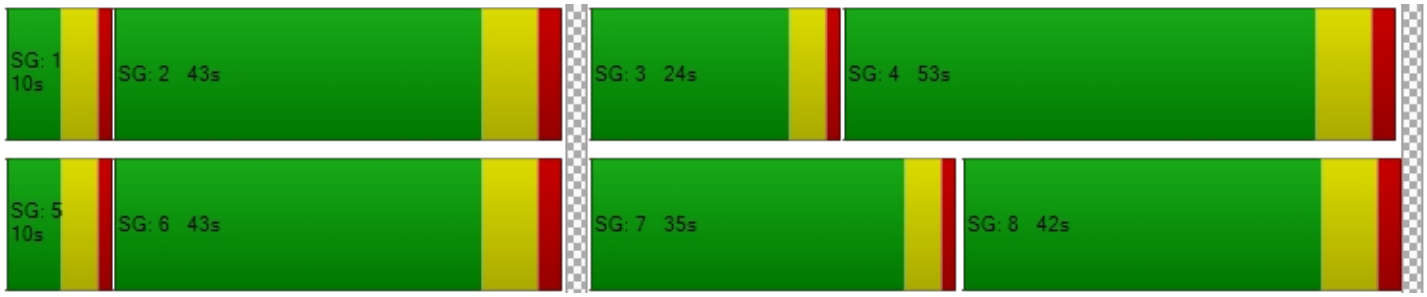
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 18.43 | 49.59 | 49.49 | 37.86 | 35.15 | 35.06 | 6.17 | 74.84 | 73.13 | 0.96 | 49.21 | 45.47 |
| Stops [stops/h] | 356.69 | 1464.33 | 1459.34 | 1275.13 | 615.55 | 610.96 | 75.73 | 1410.49 | 1349.05 | 15.52 | 1423.13 | 1225.75 |
| Fuel consumption [US gal/h] | 15.96 | 87.20 | 86.77 | 77.43 | 23.14 | 22.94 | 2.89 | 74.21 | 69.59 | 0.55 | 77.32 | 62.21 |
| CO [g/h] | 1115.54 | 6094.95 | 6065.08 | 5412.23 | 1617.42 | 1603.35 | 201.99 | 5187.17 | 4864.65 | 38.16 | 5404.35 | 4348.57 |
| NOx [g/h] | 217.04 | 1185.86 | 1180.04 | 1053.02 | 314.69 | 311.95 | 39.30 | 1009.23 | 946.48 | 7.43 | 1051.49 | 846.07 |
| VOC [g/h] | 258.54 | 1412.56 | 1405.64 | 1254.34 | 374.85 | 371.59 | 46.81 | 1202.18 | 1127.43 | 8.84 | 1252.51 | 1007.82 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 531 | 700 | 546 | 546 |
| d_b, Bicycle Delay [s] | 35.08 | 27.46 | 34.35 | 34.35 |
| l_b,int, Bicycle LOS Score for Intersection | 3.074 | 3.109 | 2.920 | 2.797 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 51.445 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1632 | 152 | 43 | 1248 | 15 | 25 | 0 | 56 | 438 | 0 | 92 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1632 | 152 | 43 | 1248 | 15 | 25 | 0 | 56 | 438 | 0 | 92 |
| Peak Hour Factor | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 418 | 39 | 11 | 320 | 4 | 6 | 0 | 14 | 112 | 0 | 24 |
| Total Analysis Volume [veh/h] | 38 | 1672 | 156 | 44 | 1279 | 15 | 26 | 0 | 57 | 449 | 0 | 94 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.07 | 0.02 | 0.00 | 0.13 | 0.01 | 0.00 | 2.30 | 0.00 | 0.14 | 51.44 | 0.00 | 0.34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 12.29 | 0.00 | 0.00 | 17.56 | 0.00 | 0.00 | 1261.37 | 519.55 | 15.09 | 10000.0 | 472.02 | 24.68 |
| Movement LOS | B | A | A | C | A | A | F | F | C | F | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.23 | 0.00 | 0.00 | 0.46 | 0.00 | 0.00 | 4.17 | 0.47 | 0.47 | 57.94 | 1.46 | 1.46 |
| 95th-Percentile Queue Length [ft/ln] | 5.75 | 0.00 | 0.00 | 11.38 | 0.00 | 0.00 | 104.35 | 11.86 | 11.86 | 1448.50 | 36.49 | 36.49 |
| d_A, Approach Delay [s/veh] | 0.25 | | | 0.58 | | | 405.49 | | | 8273.15 | | |
| Approach LOS | A | | | A | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1182.04 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 27.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.158 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 0 | 139 | 0 | 0 | 153 | 32 | 211 | 25 | 73 | 315 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 0 | 139 | 0 | 0 | 153 | 32 | 211 | 25 | 73 | 315 | 0 |
| Peak Hour Factor | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 0 | 38 | 0 | 0 | 42 | 9 | 58 | 7 | 20 | 87 | 0 |
| Total Analysis Volume [veh/h] | 31 | 0 | 154 | 0 | 0 | 169 | 35 | 233 | 28 | 81 | 348 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.16 | 0.00 | 0.19 | 0.00 | 0.00 | 0.24 | 0.03 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 27.04 | 21.85 | 13.24 | 26.10 | 20.06 | 11.83 | 8.01 | 0.00 | 0.00 | 7.86 | 0.00 | 0.00 |
| Movement LOS | D | C | B | D | C | B | A | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.58 | 1.58 | 1.58 | 0.95 | 0.95 | 0.95 | 0.06 | 0.06 | 0.06 | 0.14 | 0.14 | 0.14 |
| 95th-Percentile Queue Length [ft/ln] | 39.38 | 39.38 | 39.38 | 23.75 | 23.75 | 23.75 | 1.52 | 1.52 | 1.52 | 3.53 | 3.53 | 3.53 |
| d_A, Approach Delay [s/veh] | 15.55 | | | 11.83 | | | 0.95 | | | 1.48 | | |
| Approach LOS | C | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 5.37 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 18.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.694 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1694 | 292 | 37 | 1659 | 63 | 40 | 1 | 67 | 240 | 4 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1694 | 292 | 37 | 1659 | 63 | 40 | 1 | 67 | 240 | 4 | 36 |
| Peak Hour Factor | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 431 | 74 | 9 | 422 | 16 | 10 | 0 | 17 | 61 | 1 | 9 |
| Total Analysis Volume [veh/h] | 38 | 1725 | 297 | 38 | 1689 | 64 | 41 | 1 | 68 | 244 | 4 | 37 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 85 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 48 | 0 | 10 | 48 | 0 | 0 | 27 | 0 | 0 | 27 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 50 | 50 | 3 | 50 | 50 | 14 | 14 | 14 | 14 | 14 |
| g / C, Green / Cycle | 0.04 | 0.59 | 0.59 | 0.04 | 0.59 | 0.59 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.48 | 0.17 | 0.02 | 0.47 | 0.04 | 0.02 | 0.04 | 0.14 | 0.00 | 0.02 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 61 | 2134 | 1067 | 61 | 2134 | 1067 | 332 | 298 | 280 | 298 | 298 |
| d1, Uniform Delay [s] | 40.43 | 13.53 | 8.44 | 40.43 | 13.27 | 7.31 | 30.31 | 30.76 | 34.54 | 29.65 | 30.20 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.94 | 3.42 | 0.65 | 3.94 | 3.10 | 0.11 | 0.06 | 0.15 | 3.32 | 0.01 | 0.07 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.63 | 0.81 | 0.28 | 0.63 | 0.79 | 0.06 | 0.12 | 0.23 | 0.87 | 0.01 | 0.12 |
| d, Delay for Lane Group [s/veh] | 44.37 | 16.95 | 9.09 | 44.37 | 16.37 | 7.41 | 30.37 | 30.91 | 37.86 | 29.65 | 30.27 |
| Lane Group LOS | D | B | A | D | B | A | C | C | D | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.79 | 9.86 | 2.09 | 0.79 | 9.42 | 0.39 | 0.69 | 1.19 | 4.92 | 0.07 | 0.62 |
| 50th-Percentile Queue Length [ft/ln] | 19.66 | 246.51 | 52.31 | 19.66 | 235.43 | 9.66 | 17.34 | 29.67 | 123.08 | 1.65 | 15.61 |
| 95th-Percentile Queue Length [veh/ln] | 1.42 | 15.01 | 3.77 | 1.42 | 14.45 | 0.70 | 1.25 | 2.14 | 8.56 | 0.12 | 1.12 |
| 95th-Percentile Queue Length [ft/ln] | 35.39 | 375.26 | 94.17 | 35.39 | 361.25 | 17.39 | 31.21 | 53.41 | 214.05 | 2.98 | 28.09 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 44.37 | 16.95 | 9.09 | 44.37 | 16.37 | 7.41 | 30.37 | 30.91 | 30.91 | 37.86 | 29.65 | 30.27 |
| Movement LOS | D | B | A | D | B | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 16.32 | | | 16.65 | | | 30.71 | | | 36.76 | | |
| Approach LOS | B | | | B | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 18.20 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.694 | | | | | | | | | | | |

**Emissions**

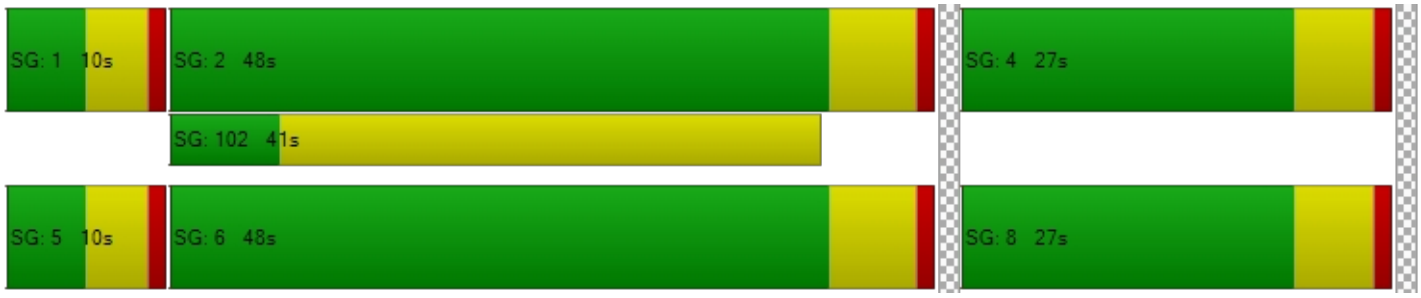
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.01 | 136.71 | 23.54 | 0.90 | 39.90 | 1.51 | 1.76 | 2.97 | 15.12 | 0.25 | 2.29 |
| Stops [stops/h] | 33.31 | 835.24 | 88.63 | 33.31 | 797.69 | 16.37 | 29.38 | 50.27 | 208.51 | 2.80 | 26.44 |
| Fuel consumption [US gal/h] | 1.18 | 29.09 | 3.31 | 1.11 | 24.62 | 0.51 | 0.61 | 1.03 | 4.47 | 0.06 | 0.57 |
| CO [g/h] | 82.64 | 2033.05 | 231.56 | 77.59 | 1721.25 | 35.65 | 42.30 | 72.28 | 312.43 | 4.23 | 39.83 |
| NOx [g/h] | 16.08 | 395.56 | 45.05 | 15.10 | 334.89 | 6.94 | 8.23 | 14.06 | 60.79 | 0.82 | 7.75 |
| VOC [g/h] | 19.15 | 471.18 | 53.67 | 17.98 | 398.92 | 8.26 | 9.80 | 16.75 | 72.41 | 0.98 | 9.23 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 32.21 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.329 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 976 | 976 | 494 | 494 |
| d_b, Bicycle Delay [s] | 11.13 | 11.13 | 24.09 | 24.09 |
| l_b,int, Bicycle LOS Score for Intersection | 3.259 | 3.037 | 1.741 | 2.030 |
| Bicycle LOS | C | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 53.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.945 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 33 | 1562 | 99 | 467 | 1417 | 82 | 196 | 244 | 35 | 78 | 81 | 286 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 33 | 1562 | 99 | 467 | 1417 | 82 | 196 | 244 | 35 | 78 | 81 | 286 |
| Peak Hour Factor | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 406 | 26 | 121 | 368 | 21 | 51 | 63 | 9 | 20 | 21 | 74 |
| Total Analysis Volume [veh/h] | 34 | 1624 | 103 | 485 | 1473 | 85 | 204 | 254 | 36 | 81 | 84 | 297 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 41 | 0 | 37 | 68 | 0 | 0 | 52 | 0 | 0 | 52 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 57 | 57 | 32 | 86 | 86 | 24 | 24 | 24 | 24 | 24 |
| g / C, Green / Cycle | 0.03 | 0.44 | 0.44 | 0.25 | 0.66 | 0.66 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.45 | 0.06 | 0.29 | 0.41 | 0.05 | 0.12 | 0.16 | 0.05 | 0.05 | 0.17 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 47 | 1575 | 788 | 422 | 2371 | 1186 | 281 | 327 | 86 | 327 | 327 |
| d1, Uniform Delay [s] | 62.74 | 36.56 | 21.81 | 48.85 | 12.82 | 7.95 | 49.46 | 51.89 | 45.71 | 45.66 | 52.13 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.90 | 31.02 | 0.34 | 90.93 | 1.24 | 0.12 | 1.34 | 3.25 | 16.75 | 0.15 | 3.99 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.73 | 1.03 | 0.13 | 1.15 | 0.62 | 0.07 | 0.73 | 0.89 | 0.94 | 0.26 | 0.91 |
| d, Delay for Lane Group [s/veh] | 77.64 | 67.58 | 22.15 | 139.78 | 14.06 | 8.07 | 50.81 | 55.14 | 62.46 | 45.81 | 56.12 |
| Lane Group LOS | E | F | C | F | B | A | D | E | E | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.31 | 31.17 | 1.98 | 24.30 | 12.15 | 0.88 | 6.29 | 9.52 | 2.67 | 2.36 | 9.85 |
| 50th-Percentile Queue Length [ft/ln] | 32.78 | 779.16 | 49.43 | 607.50 | 303.84 | 21.98 | 157.26 | 238.00 | 66.73 | 59.12 | 246.33 |
| 95th-Percentile Queue Length [veh/ln] | 2.36 | 41.28 | 3.56 | 35.05 | 17.87 | 1.58 | 10.40 | 14.58 | 4.80 | 4.26 | 15.00 |
| 95th-Percentile Queue Length [ft/ln] | 59.01 | 1032.11 | 88.97 | 876.13 | 446.77 | 39.57 | 260.09 | 364.50 | 120.12 | 106.42 | 375.03 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 77.64 | 67.58 | 22.15 | 139.78 | 14.06 | 8.07 | 50.81 | 55.14 | 55.14 | 62.46 | 45.81 | 56.12 |
| Movement LOS | E | F | C | F | B | A | D | E | E | E | D | E |
| d_A, Approach Delay [s/veh] | 65.11 | | | 43.65 | | | 53.35 | | | 55.36 | | |
| Approach LOS | E | | | D | | | D | | | E | | |
| d_I, Intersection Delay [s/veh] | 53.74 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.945 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.78 | 84.84 | 5.38 | 31.88 | 96.82 | 5.59 | 11.27 | 16.02 | 2.85 | 2.96 | 10.46 |
| Stops [stops/h] | 36.32 | 1726.14 | 54.75 | 672.93 | 673.12 | 24.35 | 174.20 | 263.63 | 73.92 | 65.49 | 272.86 |
| Fuel consumption [US gal/h] | 0.81 | 35.36 | 0.99 | 18.82 | 11.92 | 0.50 | 3.54 | 5.37 | 1.56 | 1.27 | 5.33 |
| CO [g/h] | 56.68 | 2471.62 | 69.08 | 1315.74 | 833.09 | 35.23 | 247.12 | 375.36 | 108.71 | 88.54 | 372.54 |
| NOx [g/h] | 11.03 | 480.89 | 13.44 | 255.99 | 162.09 | 6.86 | 48.08 | 73.03 | 21.15 | 17.23 | 72.48 |
| VOC [g/h] | 13.14 | 572.82 | 16.01 | 304.93 | 193.08 | 8.17 | 57.27 | 86.99 | 25.19 | 20.52 | 86.34 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.438 | 2.184 | 2.467 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 515 | 931 | 723 | 723 |
| d_b, Bicycle Delay [s] | 35.82 | 18.58 | 26.50 | 26.50 |
| l_b,int, Bicycle LOS Score for Intersection | 3.012 | 3.245 | 2.375 | 2.322 |
| Bicycle LOS | C | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.224 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 51 | 346 | 0 | 773 | 108 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 51 | 346 | 0 | 773 | 108 | 0 |
| Peak Hour Factor | 0.8670 | 0.8670 | 0.9500 | 0.8670 | 0.8670 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 100 | 0 | 223 | 31 | 0 |
| Total Analysis Volume [veh/h] | 59 | 399 | 0 | 892 | 125 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.22 | 0.43 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 22.58 | 11.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | C | B | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.84 | 2.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 20.97 | 54.99 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 13.19 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.10 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 8.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.422 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 571 | 290 | 108 | 26 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 571 | 290 | 108 | 26 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9390 | 0.9390 | 0.9390 | 0.9390 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 152 | 77 | 29 | 7 |
| Total Analysis Volume [veh/h] | 0 | 0 | 608 | 309 | 115 | 28 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.42 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 8.52 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 1.52 | 1.52 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 37.91 | 37.91 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 5.65 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.89 | | | | | |
| Intersection LOS | A | | | | | |

# Appendix E

Project Opening Year (2026)

With Project Conditions

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 169.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.155 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 209 | 1008 | 11 | 397 | 1263 | 44 | 65 | 908 | 214 | 12 | 1178 | 565 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 209 | 1008 | 11 | 397 | 1263 | 44 | 65 | 908 | 214 | 12 | 1178 | 565 |
| Peak Hour Factor | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 261 | 3 | 103 | 327 | 11 | 17 | 235 | 55 | 3 | 305 | 146 |
| Total Analysis Volume [veh/h] | 217 | 1045 | 11 | 411 | 1309 | 46 | 67 | 941 | 222 | 12 | 1221 | 585 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 8 | 7 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 30 | 30 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 17 | 36 | 36 | 28 | 47 | 47 | 10 | 46 | 46 | 20 | 56 | 56 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 |
| Vehicle Extension [s] | 2.5 | 3.5 | 3.5 | 2.5 | 3.5 | 3.5 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 12 | 29 | 29 | 23 | 40 | 40 | 5 | 52 | 52 | 2 | 49 | 49 |
| g / C, Green / Cycle | 0.09 | 0.22 | 0.22 | 0.18 | 0.30 | 0.30 | 0.04 | 0.40 | 0.40 | 0.01 | 0.37 | 0.37 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.29 | 0.29 | 0.24 | 0.38 | 0.38 | 0.04 | 0.33 | 0.31 | 0.01 | 0.51 | 0.49 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 161 | 395 | 395 | 305 | 547 | 547 | 69 | 719 | 719 | 24 | 672 | 672 |
| d1, Uniform Delay [s] | 58.85 | 50.75 | 50.75 | 53.35 | 45.25 | 45.25 | 62.26 | 35.15 | 34.11 | 63.60 | 40.75 | 40.75 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.47 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 163.75 | 169.35 | 167.48 | 176.05 | 123.45 | 121.40 | 35.72 | 10.96 | 8.34 | 10.95 | 173.10 | 156.80 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.35 | 1.34 | 1.34 | 1.35 | 1.24 | 1.24 | 0.97 | 0.83 | 0.78 | 0.49 | 1.36 | 1.33 |
| d, Delay for Lane Group [s/veh] | 222.60 | 220.10 | 218.23 | 229.40 | 168.70 | 166.65 | 97.98 | 46.11 | 42.45 | 74.55 | 213.85 | 197.55 |
| Lane Group LOS | F | F | F | F | F | F | F | D | D | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 12.37 | 30.67 | 30.46 | 24.33 | 35.17 | 34.85 | 2.82 | 18.06 | 16.13 | 0.46 | 52.23 | 49.19 |
| 50th-Percentile Queue Length [ft/ln] | 309.25 | 766.65 | 761.51 | 608.13 | 879.16 | 871.37 | 70.58 | 451.58 | 403.35 | 11.40 | 1305.84 | 1229.82 |
| 95th-Percentile Queue Length [veh/ln] | 20.07 | 45.95 | 45.61 | 37.10 | 51.03 | 50.52 | 5.08 | 25.03 | 22.72 | 0.82 | 77.26 | 72.19 |
| 95th-Percentile Queue Length [ft/ln] | 501.67 | 1148.65 | 1140.30 | 927.39 | 1275.75 | 1263.07 | 127.05 | 625.83 | 568.04 | 20.52 | 1931.41 | 1804.71 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 222.60 | 219.17 | 218.23 | 229.40 | 167.71 | 166.65 | 97.98 | 44.78 | 42.45 | 74.55 | 209.78 | 197.55 |
| Movement LOS | F | F | F | F | F | F | F | D | D | E | F | F |
| d_A, Approach Delay [s/veh] | 219.75 | | | 182.04 | | | 47.26 | | | 204.95 | | |
| Approach LOS | F | | | F | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 169.53 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.155 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 33.85 | 33.74 | 23.65 | 39.07 | 38.91 | 6.26 | 56.06 | 52.65 | 0.77 | 58.38 | 56.76 |
| Stops [stops/h] | 342.55 | 849.21 | 843.52 | 673.63 | 973.84 | 965.21 | 78.18 | 500.21 | 446.79 | 12.63 | 1446.47 | 1362.26 |
| Fuel consumption [US gal/h] | 17.87 | 43.61 | 43.20 | 34.88 | 46.16 | 45.59 | 3.00 | 16.79 | 14.93 | 0.44 | 68.66 | 62.99 |
| CO [g/h] | 1249.45 | 3048.55 | 3019.92 | 2438.21 | 3226.82 | 3186.84 | 209.52 | 1173.89 | 1043.30 | 30.90 | 4799.47 | 4402.83 |
| NOx [g/h] | 243.10 | 593.14 | 587.57 | 474.39 | 627.82 | 620.04 | 40.77 | 228.40 | 202.99 | 6.01 | 933.80 | 856.63 |
| VOC [g/h] | 289.57 | 706.53 | 699.90 | 565.08 | 747.85 | 738.58 | 48.56 | 272.06 | 241.80 | 7.16 | 1112.32 | 1020.40 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 438 | 608 | 592 | 746 |
| d_b, Bicycle Delay [s] | 39.62 | 31.50 | 32.20 | 25.55 |
| l_b,int, Bicycle LOS Score for Intersection | 2.610 | 3.017 | 2.574 | 3.059 |
| Bicycle LOS | B | C | B | C |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 34.488 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1194 | 556 | 116 | 1133 | 29 | 5 | 0 | 29 | 125 | 0 | 26 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1194 | 556 | 116 | 1133 | 29 | 5 | 0 | 29 | 125 | 0 | 26 |
| Peak Hour Factor | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 336 | 157 | 33 | 319 | 8 | 1 | 0 | 8 | 35 | 0 | 7 |
| Total Analysis Volume [veh/h] | 80 | 1345 | 626 | 131 | 1276 | 33 | 6 | 0 | 33 | 141 | 0 | 29 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.15 | 0.01 | 0.01 | 0.45 | 0.01 | 0.00 | 0.82 | 0.00 | 0.08 | 34.49 | 0.00 | 0.12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 13.10 | 0.00 | 0.00 | 27.19 | 0.00 | 0.00 | 885.05 | 1676.57 | 14.57 | 10000.0 | 1060.30 | 21.51 |
| Movement LOS | B | A | A | D | A | A | F | F | B | F | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.53 | 0.00 | 0.00 | 2.22 | 0.00 | 0.00 | 1.42 | 0.26 | 0.26 | 19.79 | 0.39 | 0.39 |
| 95th-Percentile Queue Length [ft/ln] | 13.37 | 0.00 | 0.00 | 55.45 | 0.00 | 0.00 | 35.50 | 6.55 | 6.55 | 494.66 | 9.84 | 9.84 |
| d_A, Approach Delay [s/veh] | 0.51 | | | 2.47 | | | 148.49 | | | 8297.79 | | |
| Approach LOS | A | | | A | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 384.06 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 138.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.600 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 20 | 0 | 46 | 0 | 0 | 41 | 156 | 428 | 40 | 133 | 194 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 20 | 0 | 46 | 0 | 0 | 41 | 156 | 428 | 40 | 133 | 194 | 0 |
| Peak Hour Factor | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 15 | 0 | 0 | 14 | 52 | 143 | 13 | 44 | 65 | 0 |
| Total Analysis Volume [veh/h] | 27 | 0 | 61 | 0 | 0 | 55 | 208 | 571 | 53 | 177 | 259 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.60 | 0.00 | 0.12 | 0.00 | 0.00 | 0.07 | 0.16 | 0.01 | 0.00 | 0.18 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 138.56 | 118.20 | 65.72 | 94.26 | 67.27 | 9.97 | 8.03 | 0.00 | 0.00 | 8.98 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | A | A | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 4.00 | 4.00 | 4.00 | 0.23 | 0.23 | 0.23 | 0.40 | 0.40 | 0.40 | 0.33 | 0.33 | 0.33 |
| 95th-Percentile Queue Length [ft/ln] | 100.02 | 100.02 | 100.02 | 5.68 | 5.68 | 5.68 | 9.97 | 9.97 | 9.97 | 8.17 | 8.17 | 8.17 |
| d_A, Approach Delay [s/veh] | 88.06 | | | 9.97 | | | 2.01 | | | 3.65 | | |
| Approach LOS | F | | | A | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 8.19 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 24.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.783 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 25 | 1731 | 195 | 22 | 1378 | 81 | 26 | 1 | 92 | 309 | 2 | 47 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 25 | 1731 | 195 | 22 | 1378 | 81 | 26 | 1 | 92 | 309 | 2 | 47 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 470 | 53 | 6 | 374 | 22 | 7 | 0 | 25 | 84 | 1 | 13 |
| Total Analysis Volume [veh/h] | 27 | 1879 | 212 | 24 | 1496 | 88 | 28 | 1 | 100 | 336 | 2 | 51 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 95 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | 5.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 48 | 48 | 10 | 48 | 48 | 37 | 37 | 37 | 37 | 37 | 37 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.0 | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 55 | 55 | 2 | 54 | 54 | 21 | 21 | 21 | 21 | 21 |
| g / C, Green / Cycle | 0.03 | 0.57 | 0.57 | 0.03 | 0.57 | 0.57 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.52 | 0.12 | 0.01 | 0.42 | 0.05 | 0.02 | 0.06 | 0.20 | 0.00 | 0.03 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 47 | 2063 | 1032 | 43 | 2056 | 1028 | 417 | 391 | 342 | 391 | 391 |
| d1, Uniform Delay [s] | 45.64 | 18.10 | 9.81 | 45.75 | 14.95 | 9.19 | 29.60 | 30.85 | 36.29 | 29.15 | 29.97 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.07 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.07 | 7.49 | 0.45 | 4.02 | 2.30 | 0.16 | 0.02 | 0.13 | 14.71 | 0.00 | 0.06 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.57 | 0.91 | 0.21 | 0.55 | 0.73 | 0.09 | 0.07 | 0.26 | 0.98 | 0.01 | 0.13 |
| d, Delay for Lane Group [s/veh] | 49.71 | 25.60 | 10.26 | 49.77 | 17.25 | 9.35 | 29.63 | 30.98 | 51.00 | 29.15 | 30.02 |
| Lane Group LOS | D | C | B | D | B | A | C | C | D | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.64 | 15.88 | 1.81 | 0.57 | 9.67 | 0.70 | 0.50 | 1.87 | 8.66 | 0.03 | 0.92 |
| 50th-Percentile Queue Length [ft/ln] | 16.02 | 397.09 | 45.22 | 14.28 | 241.79 | 17.46 | 12.41 | 46.73 | 216.49 | 0.87 | 22.90 |
| 95th-Percentile Queue Length [veh/ln] | 1.15 | 22.42 | 3.26 | 1.03 | 14.77 | 1.26 | 0.89 | 3.36 | 13.49 | 0.06 | 1.65 |
| 95th-Percentile Queue Length [ft/ln] | 28.84 | 560.49 | 81.39 | 25.71 | 369.30 | 31.44 | 22.34 | 84.11 | 337.14 | 1.57 | 41.22 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 49.71 | 25.60 | 10.26 | 49.77 | 17.25 | 9.35 | 29.63 | 30.98 | 30.98 | 51.00 | 29.15 | 30.02 |
| Movement LOS | D | C | B | D | B | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 24.37 | | | 17.30 | | | 30.68 | | | 48.14 | | |
| Approach LOS | C | | | B | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 24.06 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.783 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.14 | 148.91 | 16.80 | 0.57 | 35.34 | 2.08 | 1.20 | 4.34 | 20.82 | 0.12 | 3.16 |
| Stops [stops/h] | 24.28 | 1203.80 | 68.54 | 21.65 | 733.01 | 26.47 | 18.81 | 70.83 | 328.15 | 1.32 | 34.71 |
| Fuel consumption [US gal/h] | 0.88 | 41.49 | 2.53 | 0.74 | 22.66 | 0.82 | 0.40 | 1.49 | 7.46 | 0.03 | 0.77 |
| CO [g/h] | 61.72 | 2899.88 | 176.98 | 51.80 | 1584.07 | 57.58 | 27.73 | 104.01 | 521.17 | 2.05 | 53.53 |
| NOx [g/h] | 12.01 | 564.21 | 34.43 | 10.08 | 308.20 | 11.20 | 5.40 | 20.24 | 101.40 | 0.40 | 10.41 |
| VOC [g/h] | 14.31 | 672.08 | 41.02 | 12.00 | 367.12 | 13.34 | 6.43 | 24.10 | 120.79 | 0.47 | 12.40 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 37.14 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.337 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 874 | 874 | 653 | 653 |
| d_b, Bicycle Delay [s] | 15.06 | 15.06 | 21.56 | 21.56 |
| l_b,int, Bicycle LOS Score for Intersection | 3.307 | 2.886 | 1.772 | 2.201 |
| Bicycle LOS | C | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 54.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.926 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 385 | 11 | 63 | 375 | 46 | 15 | 19 | 5 | 28 | 59 | 138 |
| Total Analysis Volume [veh/h] | 40 | 1541 | 45 | 251 | 1498 | 183 | 62 | 77 | 18 | 111 | 236 | 553 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 40 | 40 | 40 | 40 | 40 | 40 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 7 | 7 | 0 | 0 | 0 | 7 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 24 | 24 | 0 | 24 | 24 | 0 | 0 | 0 | 34 | 34 | 34 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| Split [s] | 12 | 61 | 61 | 23 | 72 | 72 | 46 | 46 | 46 | 46 | 46 | 46 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.5 | 5.0 | 5.0 | 2.5 | 5.0 | 5.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 54 | 54 | 18 | 68 | 68 | 41 | 41 | 41 | 41 | 41 |
| g / C, Green / Cycle | 0.03 | 0.41 | 0.41 | 0.14 | 0.52 | 0.52 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.43 | 0.03 | 0.15 | 0.42 | 0.10 | 0.04 | 0.05 | 0.07 | 0.13 | 0.31 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 52 | 1482 | 741 | 239 | 1879 | 939 | 390 | 568 | 501 | 568 | 568 |
| d1, Uniform Delay [s] | 62.58 | 38.25 | 23.09 | 55.85 | 25.45 | 16.54 | 31.62 | 32.16 | 32.59 | 35.06 | 43.98 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.37 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.42 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 16.42 | 34.53 | 0.16 | 63.44 | 3.62 | 0.46 | 0.07 | 0.05 | 0.08 | 0.18 | 28.64 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 1.04 | 0.06 | 1.05 | 0.80 | 0.19 | 0.16 | 0.17 | 0.22 | 0.42 | 0.97 |
| d, Delay for Lane Group [s/veh] | 79.00 | 72.78 | 23.24 | 119.29 | 29.07 | 17.00 | 31.69 | 32.21 | 32.68 | 35.24 | 72.62 |
| Lane Group LOS | E | F | C | F | C | B | C | C | C | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.55 | 30.22 | 0.88 | 12.06 | 19.38 | 3.05 | 1.41 | 2.20 | 2.60 | 5.96 | 21.95 |
| 50th-Percentile Queue Length [ft/ln] | 38.81 | 755.61 | 22.00 | 301.38 | 484.38 | 76.19 | 35.32 | 54.96 | 65.12 | 149.00 | 548.71 |
| 95th-Percentile Queue Length [veh/ln] | 2.79 | 40.42 | 1.58 | 18.15 | 26.59 | 5.49 | 2.54 | 3.96 | 4.69 | 9.96 | 29.63 |
| 95th-Percentile Queue Length [ft/ln] | 69.87 | 1010.39 | 39.60 | 453.66 | 664.85 | 137.14 | 63.58 | 98.92 | 117.21 | 249.09 | 740.79 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 79.00 | 72.78 | 23.24 | 119.29 | 29.07 | 17.00 | 31.69 | 32.21 | 32.21 | 32.68 | 35.24 | 72.62 |
| Movement LOS | E | F | C | F | C | B | C | C | C | C | D | E |
| d_A, Approach Delay [s/veh] | 71.56 | | | 39.65 | | | 32.01 | | | 57.89 | | |
| Approach LOS | E | | | D | | | C | | | E | | |
| d_I, Intersection Delay [s/veh] | 54.19 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.926 | | | | | | | | | | | |

**Emissions**

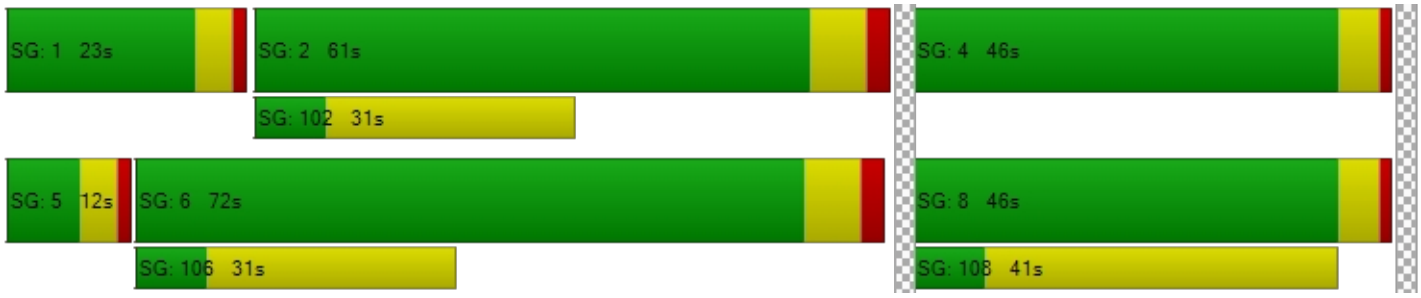
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.09 | 80.50 | 2.35 | 16.50 | 98.46 | 12.03 | 3.43 | 5.25 | 3.91 | 8.31 | 19.48 |
| Stops [stops/h] | 42.99 | 1673.97 | 24.37 | 333.84 | 1073.09 | 84.39 | 39.12 | 60.88 | 72.13 | 165.05 | 607.80 |
| Fuel consumption [US gal/h] | 0.97 | 35.38 | 0.44 | 8.62 | 18.84 | 1.59 | 0.76 | 1.18 | 1.30 | 2.95 | 12.33 |
| CO [g/h] | 67.56 | 2473.25 | 31.05 | 602.22 | 1317.18 | 111.46 | 52.91 | 82.14 | 90.70 | 205.97 | 861.94 |
| NOx [g/h] | 13.14 | 481.20 | 6.04 | 117.17 | 256.28 | 21.69 | 10.29 | 15.98 | 17.65 | 40.07 | 167.70 |
| VOC [g/h] | 15.66 | 573.20 | 7.20 | 139.57 | 305.27 | 25.83 | 12.26 | 19.04 | 21.02 | 47.73 | 199.76 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.223 | 2.158 | 2.459 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 823 | 992 | 631 | 631 |
| d_b, Bicycle Delay [s] | 22.51 | 16.50 | 30.47 | 30.47 |
| l_b,int, Bicycle LOS Score for Intersection | 2.901 | 3.154 | 1.819 | 3.045 |
| Bicycle LOS | C | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 57.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.016 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 12 | 644 | 0 | 314 | 167 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 12 | 644 | 0 | 314 | 167 | 0 |
| Peak Hour Factor | 0.7700 | 0.7700 | 0.9500 | 0.7700 | 0.7700 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 209 | 0 | 102 | 54 | 0 |
| Total Analysis Volume [veh/h] | 16 | 836 | 0 | 408 | 217 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.04 | 1.02 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 13.32 | 57.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | F | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.11 | 18.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.77 | 463.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 57.01 | | 0.00 | | 0.00 | |
| Approach LOS | F | | A | | A | |
| d_I, Intersection Delay [s/veh] | 32.89 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 8.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.250 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 258 | 69 | 167 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 258 | 69 | 167 | 43 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.7950 | 0.7950 | 0.7950 | 0.7950 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 81 | 22 | 53 | 14 |
| Total Analysis Volume [veh/h] | 0 | 0 | 325 | 87 | 210 | 54 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 8.37 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.78 | 0.78 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 19.51 | 19.51 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 6.60 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.02 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Project Access Driveway 1 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 16.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1 | 1 | 470 | 4 | 5 | 326 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1 | 1 | 470 | 4 | 5 | 326 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 124 | 1 | 1 | 86 |
| Total Analysis Volume [veh/h] | 1 | 1 | 495 | 4 | 5 | 343 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.99 | 11.32 | 0.00 | 0.00 | 8.39 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 0.36 | 0.36 | 0.00 | 0.00 | 0.21 | 0.21 |
| d_A, Approach Delay [s/veh] | 13.65 | | 0.00 | | 0.12 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.08 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Project Access Driveway 2 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.009 |

**Intersection Setup**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 468 | 3 | 0 | 328 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 468 | 3 | 0 | 328 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 123 | 1 | 0 | 86 |
| Total Analysis Volume [veh/h] | 3 | 0 | 493 | 3 | 0 | 345 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.82 | 11.36 | 0.00 | 0.00 | 8.37 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.68 | 0.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 15.82 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: Project Access Driveway 3 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.009 |

**Intersection Setup**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 465 | 3 | 0 | 325 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 465 | 3 | 0 | 325 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 122 | 1 | 0 | 86 |
| Total Analysis Volume [veh/h] | 3 | 0 | 489 | 3 | 0 | 342 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.72 | 11.32 | 0.00 | 0.00 | 8.36 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.67 | 0.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 15.72 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Project Access Driveway 4 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.003 |

**Intersection Setup**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1 | 1 | 461 | 4 | 5 | 324 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1 | 1 | 461 | 4 | 5 | 324 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 121 | 1 | 1 | 85 |
| Total Analysis Volume [veh/h] | 1 | 1 | 485 | 4 | 5 | 341 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.81 | 11.24 | 0.00 | 0.00 | 8.36 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 0.36 | 0.36 | 0.00 | 0.00 | 0.21 | 0.21 |
| d_A, Approach Delay [s/veh] | 13.52 | | 0.00 | | 0.12 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.08 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 254.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.370 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 276 | 1440 | 37 | 627 | 1100 | 64 | 63 | 1318 | 192 | 14 | 967 | 448 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 276 | 1440 | 37 | 627 | 1100 | 64 | 63 | 1318 | 192 | 14 | 967 | 448 |
| Peak Hour Factor | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 72 | 378 | 10 | 164 | 289 | 17 | 17 | 346 | 50 | 4 | 254 | 118 |
| Total Analysis Volume [veh/h] | 290 | 1511 | 39 | 658 | 1154 | 67 | 66 | 1383 | 201 | 15 | 1015 | 470 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 8 | 7 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 30 | 30 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 24 | 42 | 42 | 35 | 53 | 53 | 10 | 43 | 43 | 10 | 43 | 43 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 |
| Vehicle Extension [s] | 2.5 | 3.5 | 3.5 | 2.5 | 3.5 | 3.5 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 19 | 35 | 35 | 30 | 46 | 46 | 5 | 39 | 39 | 2 | 36 | 36 |
| g / C, Green / Cycle | 0.15 | 0.27 | 0.27 | 0.23 | 0.35 | 0.35 | 0.04 | 0.30 | 0.30 | 0.02 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.17 | 0.43 | 0.43 | 0.39 | 0.34 | 0.34 | 0.04 | 0.45 | 0.43 | 0.01 | 0.43 | 0.40 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 252 | 478 | 478 | 396 | 630 | 630 | 69 | 535 | 535 | 29 | 492 | 492 |
| d1, Uniform Delay [s] | 55.35 | 47.75 | 47.75 | 49.85 | 41.58 | 41.53 | 62.22 | 45.70 | 45.70 | 63.39 | 47.25 | 47.25 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.40 | 0.40 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 74.96 | 290.23 | 288.92 | 308.30 | 25.63 | 25.09 | 32.84 | 234.09 | 219.12 | 10.54 | 266.30 | 214.09 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.15 | 1.62 | 1.62 | 1.66 | 0.97 | 0.97 | 0.95 | 1.50 | 1.46 | 0.52 | 1.57 | 1.45 |
| d, Delay for Lane Group [s/veh] | 130.31 | 337.98 | 336.67 | 358.15 | 67.22 | 66.62 | 95.07 | 279.79 | 264.81 | 73.93 | 313.55 | 261.34 |
| Lane Group LOS | F | F | F | F | E | E | F | F | F | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 13.11 | 53.00 | 52.82 | 46.05 | 22.28 | 22.12 | 2.73 | 51.00 | 48.77 | 0.56 | 51.39 | 44.26 |
| 50th-Percentile Queue Length [ft/ln] | 327.74 | 1324.95 | 1320.61 | 1151.15 | 556.99 | 552.88 | 68.37 | 1274.94 | 1219.35 | 14.01 | 1284.77 | 1106.58 |
| 95th-Percentile Queue Length [veh/ln] | 20.26 | 81.41 | 81.13 | 71.28 | 30.02 | 29.83 | 4.92 | 77.28 | 73.59 | 1.01 | 78.54 | 66.75 |
| 95th-Percentile Queue Length [ft/ln] | 506.60 | 2035.32 | 2028.16 | 1782.03 | 750.51 | 745.69 | 123.06 | 1932.07 | 1839.71 | 25.22 | 1963.47 | 1668.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 130.31 | 337.34 | 336.67 | 358.15 | 66.94 | 66.62 | 95.07 | 273.49 | 264.81 | 73.93 | 301.04 | 261.34 |
| Movement LOS | F | F | F | F | E | E | F | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 304.70 | | | 168.91 | | | 265.29 | | | 286.33 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 254.08 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.370 | | | | | | | | | | | |

**Emissions**

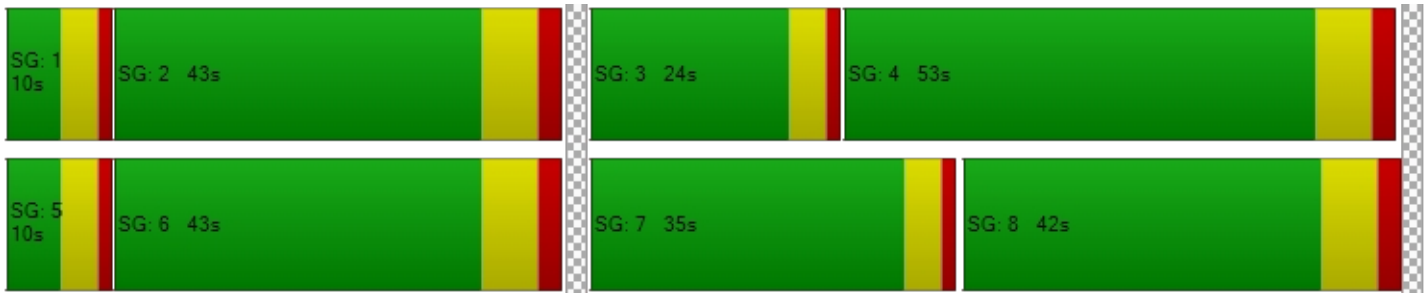
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 18.56 | 49.65 | 49.56 | 37.86 | 35.18 | 35.09 | 6.17 | 74.89 | 73.18 | 0.96 | 49.21 | 45.47 |
| Stops [stops/h] | 363.03 | 1467.64 | 1462.82 | 1275.13 | 616.97 | 612.42 | 75.73 | 1412.24 | 1350.66 | 15.52 | 1423.13 | 1225.75 |
| Fuel consumption [US gal/h] | 16.35 | 87.48 | 87.07 | 77.43 | 23.20 | 23.00 | 2.89 | 74.34 | 69.71 | 0.55 | 77.32 | 62.21 |
| CO [g/h] | 1142.71 | 6114.82 | 6085.94 | 5412.23 | 1621.77 | 1607.84 | 201.99 | 5196.49 | 4873.01 | 38.16 | 5404.35 | 4348.57 |
| NOx [g/h] | 222.33 | 1189.72 | 1184.10 | 1053.02 | 315.54 | 312.83 | 39.30 | 1011.05 | 948.11 | 7.43 | 1051.49 | 846.07 |
| VOC [g/h] | 264.83 | 1417.17 | 1410.48 | 1254.34 | 375.86 | 372.63 | 46.81 | 1204.34 | 1129.37 | 8.84 | 1252.51 | 1007.82 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 531 | 700 | 546 | 546 |
| d_b, Bicycle Delay [s] | 35.08 | 27.46 | 34.35 | 34.35 |
| l_b,int, Bicycle LOS Score for Intersection | 3.078 | 3.110 | 2.921 | 2.797 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 52.831 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1632 | 158 | 44 | 1248 | 15 | 25 | 0 | 56 | 444 | 0 | 96 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1632 | 158 | 44 | 1248 | 15 | 25 | 0 | 56 | 444 | 0 | 96 |
| Peak Hour Factor | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 418 | 40 | 11 | 320 | 4 | 6 | 0 | 14 | 114 | 0 | 25 |
| Total Analysis Volume [veh/h] | 38 | 1672 | 162 | 45 | 1279 | 15 | 26 | 0 | 57 | 455 | 0 | 98 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.07 | 0.02 | 0.00 | 0.14 | 0.01 | 0.00 | 2.38 | 0.00 | 0.14 | 52.83 | 0.00 | 0.36 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 12.29 | 0.00 | 0.00 | 17.69 | 0.00 | 0.00 | 1314.08 | 528.19 | 15.09 | 10000.0 | 478.10 | 25.25 |
| Movement LOS | B | A | A | C | A | A | F | F | C | F | F | D |
| 95th-Percentile Queue Length [veh/ln] | 0.23 | 0.00 | 0.00 | 0.47 | 0.00 | 0.00 | 4.20 | 0.47 | 0.47 | 58.70 | 1.56 | 1.56 |
| 95th-Percentile Queue Length [ft/ln] | 5.75 | 0.00 | 0.00 | 11.75 | 0.00 | 0.00 | 105.08 | 11.86 | 11.86 | 1467.62 | 38.94 | 38.94 |
| d_A, Approach Delay [s/veh] | 0.25 | | | 0.59 | | | 422.00 | | | 8232.32 | | |
| Approach LOS | A | | | A | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1192.82 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 28.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.167 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 0 | 140 | 0 | 0 | 153 | 32 | 218 | 25 | 77 | 325 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 0 | 140 | 0 | 0 | 153 | 32 | 218 | 25 | 77 | 325 | 0 |
| Peak Hour Factor | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 0 | 39 | 0 | 0 | 42 | 9 | 60 | 7 | 21 | 90 | 0 |
| Total Analysis Volume [veh/h] | 31 | 0 | 155 | 0 | 0 | 169 | 35 | 241 | 28 | 85 | 360 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.17 | 0.00 | 0.20 | 0.00 | 0.00 | 0.25 | 0.03 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 28.38 | 22.74 | 13.59 | 27.25 | 20.72 | 11.98 | 8.04 | 0.00 | 0.00 | 7.88 | 0.00 | 0.00 |
| Movement LOS | D | C | B | D | C | B | A | A | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.65 | 1.65 | 1.65 | 0.97 | 0.97 | 0.97 | 0.06 | 0.06 | 0.06 | 0.15 | 0.15 | 0.15 |
| 95th-Percentile Queue Length [ft/ln] | 41.36 | 41.36 | 41.36 | 24.22 | 24.22 | 24.22 | 1.52 | 1.52 | 1.52 | 3.71 | 3.71 | 3.71 |
| d_A, Approach Delay [s/veh] | 16.05 | | | 11.98 | | | 0.93 | | | 1.51 | | |
| Approach LOS | C | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 5.40 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 18.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.698 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1700 | 293 | 37 | 1665 | 63 | 40 | 1 | 67 | 244 | 4 | 36 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1700 | 293 | 37 | 1665 | 63 | 40 | 1 | 67 | 244 | 4 | 36 |
| Peak Hour Factor | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 | 0.9820 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 433 | 75 | 9 | 424 | 16 | 10 | 0 | 17 | 62 | 1 | 9 |
| Total Analysis Volume [veh/h] | 38 | 1731 | 298 | 38 | 1696 | 64 | 41 | 1 | 68 | 248 | 4 | 37 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 85 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | 5.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 48 | 48 | 10 | 48 | 48 | 27 | 27 | 27 | 27 | 27 | 27 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.0 | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 50 | 50 | 3 | 50 | 50 | 14 | 14 | 14 | 14 | 14 |
| g / C, Green / Cycle | 0.04 | 0.59 | 0.59 | 0.04 | 0.59 | 0.59 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.48 | 0.17 | 0.02 | 0.47 | 0.04 | 0.02 | 0.04 | 0.15 | 0.00 | 0.02 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 61 | 2126 | 1063 | 61 | 2126 | 1063 | 336 | 302 | 284 | 302 | 302 |
| d1, Uniform Delay [s] | 40.43 | 13.72 | 8.54 | 40.43 | 13.47 | 7.39 | 30.15 | 30.59 | 34.45 | 29.49 | 30.04 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.94 | 3.56 | 0.66 | 3.94 | 3.23 | 0.11 | 0.06 | 0.14 | 3.36 | 0.01 | 0.07 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.63 | 0.81 | 0.28 | 0.63 | 0.80 | 0.06 | 0.12 | 0.23 | 0.87 | 0.01 | 0.12 |
| d, Delay for Lane Group [s/veh] | 44.37 | 17.28 | 9.20 | 44.37 | 16.70 | 7.50 | 30.21 | 30.73 | 37.80 | 29.49 | 30.10 |
| Lane Group LOS | D | B | A | D | B | A | C | C | D | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.79 | 10.05 | 2.12 | 0.79 | 9.60 | 0.39 | 0.69 | 1.18 | 5.00 | 0.07 | 0.62 |
| 50th-Percentile Queue Length [ft/ln] | 19.66 | 251.17 | 53.04 | 19.66 | 240.11 | 9.75 | 17.28 | 29.57 | 125.08 | 1.65 | 15.55 |
| 95th-Percentile Queue Length [veh/ln] | 1.42 | 15.25 | 3.82 | 1.42 | 14.69 | 0.70 | 1.24 | 2.13 | 8.67 | 0.12 | 1.12 |
| 95th-Percentile Queue Length [ft/ln] | 35.39 | 381.13 | 95.47 | 35.39 | 367.17 | 17.56 | 31.11 | 53.23 | 216.79 | 2.97 | 28.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 44.37 | 17.28 | 9.20 | 44.37 | 16.70 | 7.50 | 30.21 | 30.73 | 30.73 | 37.80 | 29.49 | 30.10 |
| Movement LOS | D | B | A | D | B | A | C | C | C | D | C | C |
| d_A, Approach Delay [s/veh] | 16.62 | | | 16.96 | | | 30.54 | | | 36.70 | | |
| Approach LOS | B | | | B | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 18.48 | | | | | | | | | | | |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.698 | | | | | | | | | | | |

**Emissions**

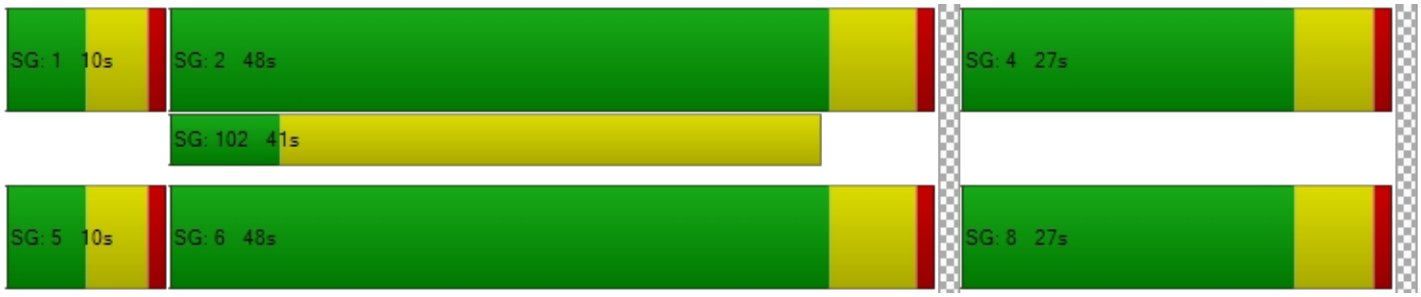
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.01 | 137.18 | 23.62 | 0.90 | 40.06 | 1.51 | 1.76 | 2.97 | 15.36 | 0.25 | 2.29 |
| Stops [stops/h] | 33.31 | 851.03 | 89.85 | 33.31 | 813.55 | 16.52 | 29.28 | 50.10 | 211.90 | 2.79 | 26.35 |
| Fuel consumption [US gal/h] | 1.18 | 29.59 | 3.35 | 1.11 | 25.12 | 0.51 | 0.60 | 1.03 | 4.54 | 0.06 | 0.57 |
| CO [g/h] | 82.64 | 2068.24 | 234.23 | 77.59 | 1755.63 | 35.97 | 42.13 | 71.99 | 317.32 | 4.22 | 39.68 |
| NOx [g/h] | 16.08 | 402.40 | 45.57 | 15.10 | 341.58 | 7.00 | 8.20 | 14.01 | 61.74 | 0.82 | 7.72 |
| VOC [g/h] | 19.15 | 479.33 | 54.29 | 17.98 | 406.88 | 8.34 | 9.76 | 16.68 | 73.54 | 0.98 | 9.20 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 32.21 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.331 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 976 | 976 | 494 | 494 |
| d_b, Bicycle Delay [s] | 11.13 | 11.13 | 24.09 | 24.09 |
| l_b,int, Bicycle LOS Score for Intersection | 3.265 | 3.043 | 1.741 | 2.036 |
| Bicycle LOS | C | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 54.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.951 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Peak Hour Factor | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 407 | 26 | 122 | 370 | 21 | 51 | 63 | 9 | 20 | 21 | 75 |
| Total Analysis Volume [veh/h] | 34 | 1628 | 103 | 490 | 1479 | 85 | 204 | 254 | 36 | 81 | 84 | 300 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 40 | 40 | 40 | 40 | 40 | 40 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 7 | 7 | 0 | 0 | 0 | 7 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 24 | 24 | 0 | 24 | 24 | 0 | 0 | 0 | 34 | 34 | 34 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 41 | 41 | 37 | 68 | 68 | 52 | 52 | 52 | 52 | 52 | 52 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.5 | 5.0 | 5.0 | 2.5 | 5.0 | 5.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 57 | 57 | 32 | 85 | 85 | 24 | 24 | 24 | 24 | 24 |
| g / C, Green / Cycle | 0.03 | 0.44 | 0.44 | 0.25 | 0.66 | 0.66 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.45 | 0.06 | 0.29 | 0.41 | 0.05 | 0.12 | 0.16 | 0.05 | 0.05 | 0.17 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 47 | 1569 | 785 | 422 | 2365 | 1183 | 284 | 330 | 89 | 330 | 330 |
| d1, Uniform Delay [s] | 62.74 | 36.66 | 21.94 | 48.85 | 12.98 | 8.03 | 49.27 | 51.68 | 45.52 | 45.48 | 52.03 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.90 | 33.03 | 0.35 | 95.36 | 1.26 | 0.12 | 1.28 | 3.01 | 12.47 | 0.15 | 3.99 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.73 | 1.04 | 0.13 | 1.16 | 0.63 | 0.07 | 0.72 | 0.88 | 0.91 | 0.25 | 0.91 |
| d, Delay for Lane Group [s/veh] | 77.64 | 69.70 | 22.28 | 144.21 | 14.24 | 8.14 | 50.55 | 54.69 | 57.99 | 45.63 | 56.02 |
| Lane Group LOS | E | F | C | F | B | A | D | D | E | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.31 | 31.50 | 1.98 | 24.82 | 12.32 | 0.88 | 6.27 | 9.48 | 2.57 | 2.36 | 9.95 |
| 50th-Percentile Queue Length [ft/ln] | 32.78 | 787.51 | 49.60 | 620.52 | 307.92 | 22.12 | 156.83 | 236.99 | 64.32 | 58.99 | 248.77 |
| 95th-Percentile Queue Length [veh/ln] | 2.36 | 41.87 | 3.57 | 35.89 | 18.07 | 1.59 | 10.38 | 14.53 | 4.63 | 4.25 | 15.12 |
| 95th-Percentile Queue Length [ft/ln] | 59.01 | 1046.78 | 89.28 | 897.33 | 451.81 | 39.81 | 259.51 | 363.23 | 115.78 | 106.18 | 378.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 77.64 | 69.70 | 22.28 | 144.21 | 14.24 | 8.14 | 50.55 | 54.69 | 54.69 | 57.99 | 45.63 | 56.02 |
| Movement LOS | E | F | C | F | B | A | D | D | D | E | D | E |
| d_A, Approach Delay [s/veh] | 67.08 | | | 45.00 | | | 52.98 | | | 54.49 | | |
| Approach LOS | E | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 54.90 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.951 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.78 | 85.05 | 5.38 | 32.21 | 97.21 | 5.59 | 11.27 | 16.02 | 2.85 | 2.96 | 10.57 |
| Stops [stops/h] | 36.32 | 1744.64 | 54.94 | 687.34 | 682.15 | 24.50 | 173.71 | 262.51 | 71.25 | 65.34 | 275.56 |
| Fuel consumption [US gal/h] | 0.81 | 36.23 | 0.99 | 19.50 | 12.06 | 0.51 | 3.52 | 5.34 | 1.47 | 1.26 | 5.38 |
| CO [g/h] | 56.68 | 2532.26 | 69.35 | 1363.12 | 842.80 | 35.39 | 246.19 | 373.08 | 102.54 | 88.26 | 375.86 |
| NOx [g/h] | 11.03 | 492.69 | 13.49 | 265.21 | 163.98 | 6.88 | 47.90 | 72.59 | 19.95 | 17.17 | 73.13 |
| VOC [g/h] | 13.14 | 586.88 | 16.07 | 315.92 | 195.33 | 8.20 | 57.06 | 86.46 | 23.76 | 20.46 | 87.11 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.441 | 2.184 | 2.468 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 515 | 931 | 723 | 723 |
| d_b, Bicycle Delay [s] | 35.82 | 18.58 | 26.50 | 26.50 |
| l_b,int, Bicycle LOS Score for Intersection | 3.016 | 3.254 | 2.375 | 2.327 |
| Bicycle LOS | C | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.225 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 51 | 349 | 0 | 777 | 108 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 51 | 349 | 0 | 777 | 108 | 0 |
| Peak Hour Factor | 0.8670 | 0.8670 | 0.9500 | 0.8670 | 0.8670 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 101 | 0 | 224 | 31 | 0 |
| Total Analysis Volume [veh/h] | 59 | 403 | 0 | 896 | 125 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | No | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.44 | 0.00 | 0.01 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 22.70 | 11.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | C | B | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.84 | 2.24 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 21.11 | 55.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 13.24 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.12 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 8.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.424 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 574 | 290 | 108 | 26 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 574 | 290 | 108 | 26 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9390 | 0.9390 | 0.9390 | 0.9390 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 153 | 77 | 29 | 7 |
| Total Analysis Volume [veh/h] | 0 | 0 | 611 | 309 | 115 | 28 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.42 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 8.53 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 1.53 | 1.53 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 38.29 | 38.29 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 5.67 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 4.90 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Project Access Driveway 1 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.011 |

**Intersection Setup**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 5 | 357 | 1 | 2 | 399 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 5 | 357 | 1 | 2 | 399 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 1 | 94 | 0 | 1 | 105 |
| Total Analysis Volume [veh/h] | 4 | 5 | 376 | 1 | 2 | 420 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | No | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | No | | | | | |
| Number of Storage Spaces in Median | 2 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.34 | 10.52 | 0.00 | 0.00 | 8.05 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.43 | 1.43 | 0.00 | 0.00 | 0.08 | 0.08 |
| d_A, Approach Delay [s/veh] | 12.66 | | 0.00 | | 0.04 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.16 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Project Access Driveway 2 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.008 |

**Intersection Setup**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 360 | 3 | 0 | 397 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 360 | 3 | 0 | 397 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 95 | 1 | 0 | 104 |
| Total Analysis Volume [veh/h] | 3 | 0 | 379 | 3 | 0 | 418 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.23 | 10.49 | 0.00 | 0.00 | 8.06 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.64 | 0.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 15.23 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: Project Access Driveway 3 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.008 |

**Intersection Setup**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 357 | 3 | 0 | 394 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 357 | 3 | 0 | 394 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 94 | 1 | 0 | 104 |
| Total Analysis Volume [veh/h] | 3 | 0 | 376 | 3 | 0 | 415 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.15 | 10.46 | 0.00 | 0.00 | 8.05 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.63 | 0.63 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 15.15 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Project Access Driveway 4 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 15.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.011 |

**Intersection Setup**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 5 | 355 | 1 | 2 | 391 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 5 | 355 | 1 | 2 | 391 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 1 | 93 | 0 | 1 | 103 |
| Total Analysis Volume [veh/h] | 4 | 5 | 374 | 1 | 2 | 412 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 15.20 | 10.50 | 0.00 | 0.00 | 8.04 | 0.00 |
| Movement LOS | C | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.42 | 1.42 | 0.00 | 0.00 | 0.08 | 0.08 |
| d_A, Approach Delay [s/veh] | 12.59 | | 0.00 | | 0.04 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.16 | | | | | |
| Intersection LOS | C | | | | | |

# Appendix F

Horizon Year (2040)

Without Project Conditions

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 293.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.516 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 206 | 1093 | 9 | 378 | 2622 | 45 | 97 | 984 | 349 | 13 | 1202 | 625 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 206 | 1093 | 9 | 378 | 2622 | 45 | 97 | 984 | 349 | 13 | 1202 | 625 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 288 | 2 | 99 | 690 | 12 | 26 | 259 | 92 | 3 | 316 | 164 |
| Total Analysis Volume [veh/h] | 217 | 1151 | 9 | 398 | 2760 | 47 | 102 | 1036 | 367 | 14 | 1265 | 658 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 14 | 47 | 0 | 28 | 61 | 0 | 10 | 45 | 0 | 10 | 45 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 9 | 40 | 40 | 23 | 54 | 54 | 5 | 41 | 41 | 2 | 38 | 38 |
| g / C, Green / Cycle | 0.07 | 0.30 | 0.30 | 0.18 | 0.41 | 0.41 | 0.04 | 0.31 | 0.31 | 0.02 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.31 | 0.30 | 0.22 | 0.74 | 0.74 | 0.06 | 0.38 | 0.36 | 0.01 | 0.51 | 0.51 |
| s, saturation flow rate [veh/h] | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 129 | 577 | 577 | 323 | 782 | 782 | 73 | 595 | 595 | 29 | 548 | 548 |
| d1, Uniform Delay [s] | 60.35 | 45.25 | 45.25 | 53.35 | 38.25 | 38.25 | 62.35 | 44.64 | 44.64 | 63.42 | 46.25 | 46.25 |
| k, delay calibration | 0.08 | 0.41 | 0.41 | 0.40 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 313.75 | 35.49 | 34.86 | 124.91 | 362.84 | 362.84 | 188.52 | 112.43 | 82.24 | 9.02 | 347.78 | 346.05 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.69 | 1.01 | 1.00 | 1.23 | 1.79 | 1.79 | 1.39 | 1.22 | 1.14 | 0.48 | 1.76 | 1.75 |
| d, Delay for Lane Group [s/veh] | 374.10 | 80.74 | 80.11 | 178.26 | 401.09 | 401.09 | 250.87 | 157.07 | 126.88 | 72.45 | 394.03 | 392.30 |
| Lane Group LOS | F | F | F | F | F | F | F | F | F | E | F | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 15.28 | 23.01 | 22.91 | 21.17 | 101.40 | 101.40 | 6.19 | 36.57 | 31.58 | 0.52 | 69.64 | 69.38 |
| 50th-Percentile Queue Length [ft/ln] | 382.08 | 575.37 | 572.85 | 529.34 | 2535.01 | 2535.01 | 154.63 | 914.35 | 789.60 | 12.93 | 1741.04 | 1734.48 |
| 95th-Percentile Queue Length [veh/ln] | 24.92 | 31.00 | 30.84 | 31.75 | 158.60 | 158.60 | 11.05 | 52.43 | 44.37 | 0.93 | 107.67 | 107.23 |
| 95th-Percentile Queue Length [ft/ln] | 623.02 | 775.09 | 770.95 | 793.72 | 3965.03 | 3965.03 | 276.28 | 1310.69 | 1109.32 | 23.28 | 2691.67 | 2680.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 374.10 | 80.43 | 80.11 | 178.26 | 401.09 | 401.09 | 250.87 | 147.99 | 126.88 | 72.45 | 393.62 | 392.30 |
| Movement LOS | F | F | F | F | F | F | F | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 126.71 | | | 373.42 | | | 149.81 | | | 390.85 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 293.35 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.516 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 37.16 | 37.08 | 22.90 | 80.76 | 80.76 | 9.53 | 67.69 | 63.45 | 0.89 | 61.37 | 61.23 |
| Stops [stops/h] | 423.23 | 637.33 | 634.55 | 586.35 | 2808.01 | 2808.01 | 171.28 | 1012.81 | 874.64 | 14.32 | 1928.54 | 1921.26 |
| Fuel consumption [US gal/h] | 26.35 | 24.90 | 24.74 | 28.18 | 179.36 | 179.36 | 8.71 | 44.22 | 35.89 | 0.50 | 115.04 | 114.39 |
| CO [g/h] | 1841.63 | 1740.35 | 1729.16 | 1969.73 | 12537.5 | 12537.5 | 608.59 | 3091.06 | 2508.90 | 35.11 | 8041.27 | 7996.05 |
| NOx [g/h] | 358.31 | 338.61 | 336.43 | 383.24 | 2439.35 | 2439.35 | 118.41 | 601.41 | 488.14 | 6.83 | 1564.54 | 1555.74 |
| VOC [g/h] | 426.82 | 403.34 | 400.75 | 456.50 | 2905.69 | 2905.69 | 141.05 | 716.38 | 581.46 | 8.14 | 1863.64 | 1853.16 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 608 | 823 | 577 | 577 |
| d_b, Bicycle Delay [s] | 31.50 | 22.51 | 32.91 | 32.91 |
| l_b,int, Bicycle LOS Score for Intersection | 2.696 | 4.204 | 2.801 | 3.158 |
| Bicycle LOS | B | D | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.597 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1131 | 553 | 451 | 2255 | 29 | 5 | 0 | 29 | 343 | 0 | 436 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1131 | 553 | 451 | 2255 | 29 | 5 | 0 | 29 | 343 | 0 | 436 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 298 | 146 | 119 | 593 | 8 | 1 | 0 | 8 | 90 | 0 | 115 |
| Total Analysis Volume [veh/h] | 75 | 1191 | 582 | 475 | 2374 | 31 | 5 | 0 | 31 | 361 | 0 | 459 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.38 | 0.01 | 0.01 | 1.37 | 0.02 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 1.60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 34.37 | 0.00 | 0.00 | 213.45 | 0.00 | 0.00 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 |
| Movement LOS | D | A | A | F | A | A | F | F | F | F | F | F |
| 95th-Percentile Queue Length [veh/ln] | 1.68 | 0.00 | 0.00 | 23.55 | 0.00 | 0.00 | 1.72 | 5.86 | 5.86 | 47.95 | 60.23 | 60.23 |
| 95th-Percentile Queue Length [ft/ln] | 41.92 | 0.00 | 0.00 | 588.80 | 0.00 | 0.00 | 42.93 | 146.48 | 146.48 | 1198.71 | 1505.82 | 1505.82 |
| d_A, Approach Delay [s/veh] | 1.40 | | | 35.20 | | | 10000.00 | | | 10000.00 | | |
| Approach LOS | A | | | E | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1551.57 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 754.327 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 417 | 0 | 197 | 0 | 0 | 82 | 334 | 594 | 416 | 404 | 294 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 417 | 0 | 197 | 0 | 0 | 82 | 334 | 594 | 416 | 404 | 294 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 110 | 0 | 52 | 0 | 0 | 22 | 88 | 156 | 109 | 106 | 77 | 0 |
| Total Analysis Volume [veh/h] | 439 | 0 | 207 | 0 | 0 | 86 | 352 | 625 | 438 | 425 | 309 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 754.33 | 0.00 | 0.57 | 0.00 | 0.00 | 0.12 | 0.28 | 0.01 | 0.00 | 0.65 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 4956.14 | 10.58 | 8.46 | 0.00 | 0.00 | 13.64 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | B | A | A | A | B | A | A |
| 95th-Percentile Queue Length [veh/ln] | 83.54 | 83.54 | 83.54 | 0.40 | 0.40 | 0.40 | 0.80 | 0.80 | 0.80 | 2.40 | 2.40 | 2.40 |
| 95th-Percentile Queue Length [ft/ln] | 2088.57 | 2088.57 | 2088.57 | 9.95 | 9.95 | 9.95 | 20.04 | 20.04 | 20.04 | 59.95 | 59.95 | 59.95 |
| d_A, Approach Delay [s/veh] | 10000.00 | | | 10.58 | | | 2.10 | | | 7.90 | | |
| Approach LOS | F | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 2245.64 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 34.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.862 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 2040 | 315 | 178 | 2070 | 123 | 36 | 11 | 83 | 237 | 2 | 56 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 2040 | 315 | 178 | 2070 | 123 | 36 | 11 | 83 | 237 | 2 | 56 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 537 | 83 | 47 | 545 | 32 | 9 | 3 | 22 | 62 | 1 | 15 |
| Total Analysis Volume [veh/h] | 33 | 2147 | 332 | 187 | 2179 | 129 | 38 | 12 | 87 | 249 | 2 | 59 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 95 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 52 | 0 | 15 | 57 | 0 | 0 | 28 | 0 | 0 | 28 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 52 | 52 | 10 | 60 | 60 | 15 | 15 | 15 | 15 | 15 |
| g / C, Green / Cycle | 0.03 | 0.55 | 0.55 | 0.11 | 0.63 | 0.63 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.57 | 0.17 | 0.10 | 0.57 | 0.07 | 0.02 | 0.05 | 0.14 | 0.00 | 0.03 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 56 | 2098 | 1049 | 189 | 2379 | 1189 | 330 | 301 | 250 | 301 | 301 |
| d1, Uniform Delay [s] | 45.41 | 21.28 | 11.55 | 42.43 | 15.58 | 7.13 | 34.36 | 35.48 | 39.04 | 33.67 | 34.71 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.05 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.56 | 25.86 | 0.79 | 15.70 | 6.97 | 0.18 | 0.06 | 0.23 | 16.34 | 0.00 | 0.12 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.59 | 1.02 | 0.32 | 0.99 | 0.92 | 0.11 | 0.12 | 0.33 | 1.00 | 0.01 | 0.20 |
| d, Delay for Lane Group [s/veh] | 48.97 | 47.14 | 12.34 | 58.13 | 22.54 | 7.31 | 34.42 | 35.72 | 55.37 | 33.67 | 34.83 |
| Lane Group LOS | D | F | B | E | C | A | C | D | E | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.77 | 25.23 | 3.27 | 4.87 | 16.60 | 0.84 | 0.74 | 1.99 | 6.59 | 0.04 | 1.16 |
| 50th-Percentile Queue Length [ft/ln] | 19.31 | 630.72 | 81.78 | 121.66 | 414.89 | 20.88 | 18.46 | 49.80 | 164.76 | 0.95 | 28.99 |
| 95th-Percentile Queue Length [veh/ln] | 1.39 | 34.11 | 5.89 | 8.48 | 23.28 | 1.50 | 1.33 | 3.59 | 10.80 | 0.07 | 2.09 |
| 95th-Percentile Queue Length [ft/ln] | 34.76 | 852.75 | 147.21 | 212.11 | 581.92 | 37.59 | 33.22 | 89.63 | 270.02 | 1.71 | 52.18 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 48.97 | 47.14 | 12.34 | 58.13 | 22.54 | 7.31 | 34.42 | 35.72 | 35.72 | 55.37 | 33.67 | 34.83 |
| Movement LOS | D | F | B | E | C | A | C | D | D | E | C | C |
| d_A, Approach Delay [s/veh] | 42.56 | | | 24.42 | | | 35.36 | | | 51.32 | | |
| Approach LOS | D | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 34.58 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.862 | | | | | | | | | | | |

**Emissions**

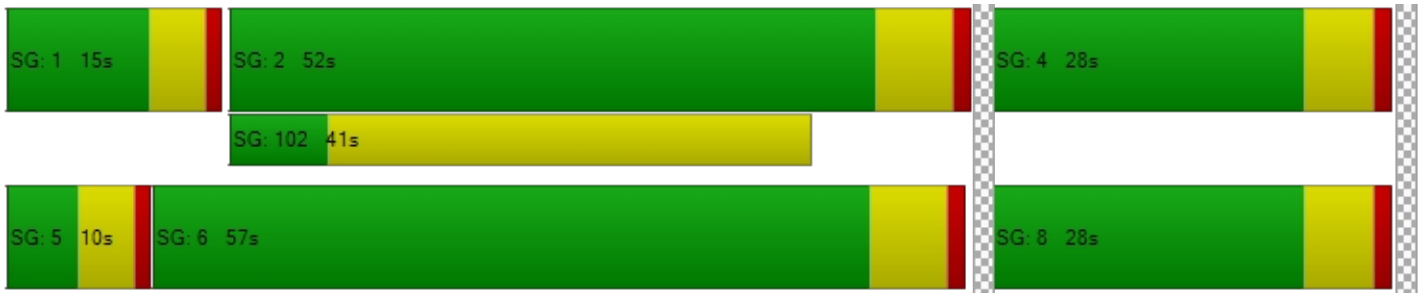
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.62 | 170.15 | 26.31 | 4.42 | 51.47 | 3.05 | 1.63 | 4.25 | 15.43 | 0.12 | 3.66 |
| Stops [stops/h] | 29.27 | 1912.09 | 123.97 | 184.42 | 1257.78 | 31.65 | 27.98 | 75.48 | 249.75 | 1.44 | 43.94 |
| Fuel consumption [US gal/h] | 1.07 | 68.68 | 4.47 | 6.44 | 39.56 | 1.00 | 0.60 | 1.61 | 5.81 | 0.03 | 0.98 |
| CO [g/h] | 74.46 | 4800.42 | 312.69 | 450.12 | 2765.17 | 69.61 | 41.90 | 112.78 | 406.23 | 2.26 | 68.56 |
| NOx [g/h] | 14.49 | 933.99 | 60.84 | 87.58 | 538.00 | 13.54 | 8.15 | 21.94 | 79.04 | 0.44 | 13.34 |
| VOC [g/h] | 17.26 | 1112.54 | 72.47 | 104.32 | 640.85 | 16.13 | 9.71 | 26.14 | 94.15 | 0.52 | 15.89 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 37.14 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.407 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 958 | 1063 | 463 | 463 |
| d_b, Bicycle Delay [s] | 12.90 | 10.42 | 28.05 | 28.05 |
| l_b,int, Bicycle LOS Score for Intersection | 3.632 | 3.618 | 1.786 | 2.071 |
| Bicycle LOS | D | D | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 55.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.950 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 1792 | 94 | 256 | 1878 | 485 | 82 | 85 | 13 | 76 | 202 | 470 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 1792 | 94 | 256 | 1878 | 485 | 82 | 85 | 13 | 76 | 202 | 470 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 472 | 25 | 67 | 494 | 128 | 22 | 22 | 3 | 20 | 53 | 124 |
| Total Analysis Volume [veh/h] | 59 | 1886 | 99 | 269 | 1977 | 511 | 86 | 89 | 14 | 80 | 213 | 495 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 37 | 0 | 0 | 37 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 69 | 0 | 19 | 78 | 0 | 0 | 42 | 0 | 0 | 42 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 5 | 63 | 63 | 14 | 72 | 72 | 36 | 36 | 36 | 36 | 36 |
| g / C, Green / Cycle | 0.04 | 0.48 | 0.48 | 0.11 | 0.55 | 0.55 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.50 | 0.05 | 0.15 | 0.52 | 0.27 | 0.05 | 0.05 | 0.04 | 0.11 | 0.26 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 73 | 1838 | 919 | 198 | 2101 | 1051 | 360 | 521 | 451 | 521 | 521 |
| d1, Uniform Delay [s] | 61.83 | 33.56 | 18.28 | 57.85 | 27.08 | 17.77 | 35.98 | 36.22 | 35.85 | 38.59 | 46.33 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.38 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.36 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.93 | 27.93 | 0.24 | 184.23 | 9.93 | 1.61 | 0.13 | 0.07 | 0.07 | 0.19 | 23.36 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 1.03 | 0.11 | 1.36 | 0.94 | 0.49 | 0.24 | 0.20 | 0.18 | 0.41 | 0.95 |
| d, Delay for Lane Group [s/veh] | 75.76 | 61.49 | 18.52 | 242.08 | 37.01 | 19.38 | 36.11 | 36.29 | 35.92 | 38.78 | 69.69 |
| Lane Group LOS | E | F | B | F | D | B | D | D | D | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.22 | 35.16 | 1.71 | 16.64 | 30.20 | 9.73 | 2.12 | 2.55 | 1.96 | 5.63 | 19.00 |
| 50th-Percentile Queue Length [ft/ln] | 55.52 | 879.09 | 42.63 | 416.02 | 754.96 | 243.28 | 53.02 | 63.80 | 49.08 | 140.69 | 475.10 |
| 95th-Percentile Queue Length [veh/ln] | 4.00 | 45.84 | 3.07 | 26.11 | 39.21 | 14.85 | 3.82 | 4.59 | 3.53 | 9.52 | 26.15 |
| 95th-Percentile Queue Length [ft/ln] | 99.94 | 1145.97 | 76.73 | 652.72 | 980.27 | 371.18 | 95.44 | 114.84 | 88.34 | 237.96 | 653.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 75.76 | 61.49 | 18.52 | 242.08 | 37.01 | 19.38 | 36.11 | 36.29 | 36.29 | 35.92 | 38.78 | 69.69 |
| Movement LOS | E | F | B | F | D | B | D | D | D | D | D | E |
| d_A, Approach Delay [s/veh] | 59.82 | | | 53.75 | | | 36.21 | | | 57.91 | | |
| Approach LOS | E | | | D | | | D | | | E | | |
| d_I, Intersection Delay [s/veh] | 55.89 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.950 | | | | | | | | | | | |

**Emissions**

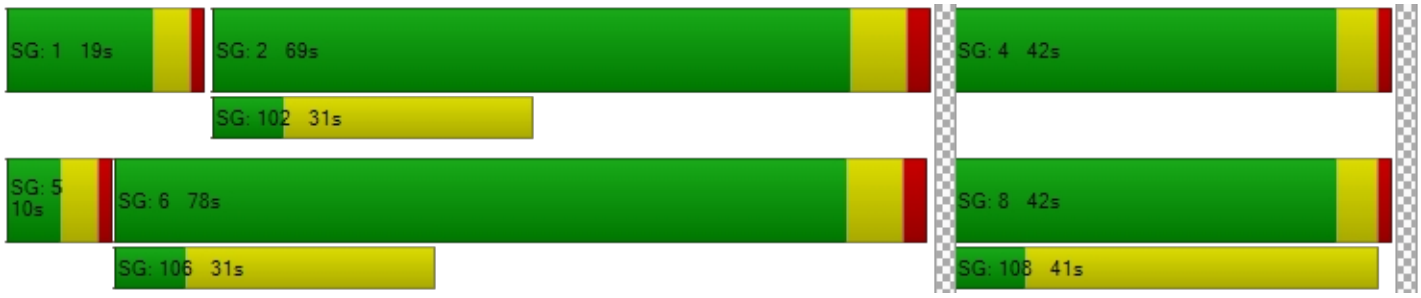
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.08 | 98.52 | 5.17 | 17.68 | 129.94 | 33.59 | 4.75 | 5.69 | 2.82 | 7.50 | 17.44 |
| Stops [stops/h] | 61.50 | 1947.51 | 47.22 | 460.83 | 1672.53 | 269.48 | 58.73 | 70.67 | 54.36 | 155.85 | 526.26 |
| Fuel consumption [US gal/h] | 1.38 | 38.41 | 0.85 | 16.52 | 29.48 | 4.89 | 1.15 | 1.39 | 1.00 | 2.85 | 10.64 |
| CO [g/h] | 96.20 | 2685.00 | 59.19 | 1154.94 | 2060.67 | 341.60 | 80.52 | 96.84 | 69.98 | 199.26 | 744.06 |
| NOx [g/h] | 18.72 | 522.40 | 11.52 | 224.71 | 400.93 | 66.46 | 15.67 | 18.84 | 13.62 | 38.77 | 144.77 |
| VOC [g/h] | 22.29 | 622.27 | 13.72 | 267.67 | 477.58 | 79.17 | 18.66 | 22.44 | 16.22 | 46.18 | 172.44 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.442 | 2.274 | 2.452 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 946 | 1085 | 569 | 569 |
| d_b, Bicycle Delay [s] | 18.05 | 13.62 | 33.27 | 33.27 |
| l_b,int, Bicycle LOS Score for Intersection | 3.246 | 3.834 | 1.871 | 2.860 |
| Bicycle LOS | C | D | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.821 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 17 | 806 | 0 | 342 | 37 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 17 | 806 | 0 | 342 | 37 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 212 | 0 | 90 | 10 | 0 |
| Total Analysis Volume [veh/h] | 18 | 848 | 0 | 360 | 39 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.03 | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.12 | 22.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | C | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.09 | 9.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.29 | 242.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 21.94 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 15.02 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 7.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.193 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 286 | 73 | 37 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 286 | 73 | 37 | 8 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 75 | 19 | 10 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 301 | 77 | 39 | 8 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 7.71 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.60 | 0.60 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 15.01 | 15.01 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 6.14 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 5.46 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 324.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.564 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 398 | 2625 | 74 | 638 | 1452 | 91 | 50 | 1051 | 162 | 7 | 688 | 356 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 398 | 2625 | 74 | 638 | 1452 | 91 | 50 | 1051 | 162 | 7 | 688 | 356 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 105 | 691 | 19 | 168 | 382 | 24 | 13 | 277 | 43 | 2 | 181 | 94 |
| Total Analysis Volume [veh/h] | 419 | 2763 | 78 | 672 | 1528 | 96 | 53 | 1106 | 171 | 7 | 724 | 375 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 0 | 30 | 30 | 0 | 20 | 20 | 0 | 20 | 20 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 25 | 55 | 0 | 29 | 59 | 0 | 10 | 36 | 0 | 10 | 36 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 | 5 | 28 | 0 |
| Vehicle Extension [s] | 2.5 | 3.5 | 0.0 | 2.5 | 3.5 | 0.0 | 2.5 | 3.0 | 0.0 | 2.5 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 20 | 48 | 48 | 24 | 52 | 52 | 5 | 33 | 33 | 1 | 29 | 29 |
| g / C, Green / Cycle | 0.16 | 0.37 | 0.37 | 0.19 | 0.40 | 0.40 | 0.04 | 0.25 | 0.25 | 0.01 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.23 | 0.75 | 0.75 | 0.37 | 0.43 | 0.43 | 0.03 | 0.34 | 0.33 | 0.00 | 0.31 | 0.27 |
| s, saturation flow rate [veh/h] | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 281 | 694 | 694 | 336 | 753 | 753 | 69 | 476 | 476 | 17 | 422 | 422 |
| d1, Uniform Delay [s] | 54.85 | 41.25 | 41.25 | 52.85 | 39.25 | 39.25 | 61.97 | 48.72 | 48.72 | 64.01 | 50.57 | 50.57 |
| k, delay calibration | 0.19 | 0.50 | 0.50 | 0.50 | 0.48 | 0.48 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 228.08 | 475.79 | 475.79 | 459.24 | 55.57 | 55.57 | 12.77 | 179.27 | 155.92 | 10.94 | 185.38 | 121.21 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.49 | 2.05 | 2.05 | 2.00 | 1.08 | 1.08 | 0.77 | 1.37 | 1.31 | 0.41 | 1.38 | 1.23 |
| d, Delay for Lane Group [s/veh] | 282.93 | 517.04 | 517.04 | 512.09 | 94.82 | 94.82 | 74.74 | 228.00 | 204.65 | 74.94 | 235.95 | 171.78 |
| Lane Group LOS | F | F | F | F | F | F | E | F | F | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 26.54 | 112.17 | 112.17 | 53.31 | 33.50 | 33.50 | 1.92 | 38.31 | 35.22 | 0.28 | 34.76 | 27.24 |
| 50th-Percentile Queue Length [ft/ln] | 663.57 | 2804.31 | 2804.31 | 1332.81 | 837.56 | 837.56 | 48.01 | 957.74 | 880.59 | 6.89 | 869.01 | 681.10 |
| 95th-Percentile Queue Length [veh/ln] | 41.07 | 177.20 | 177.20 | 83.18 | 45.43 | 45.43 | 3.46 | 57.03 | 52.00 | 0.50 | 52.04 | 39.88 |
| 95th-Percentile Queue Length [ft/ln] | 1026.68 | 4429.93 | 4429.93 | 2079.48 | 1135.66 | 1135.66 | 86.42 | 1425.69 | 1299.97 | 12.41 | 1300.99 | 996.99 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 282.93 | 517.04 | 517.04 | 512.09 | 94.82 | 94.82 | 74.74 | 218.40 | 204.65 | 74.94 | 223.37 | 171.78 |
| Movement LOS | F | F | F | F | F | F | E | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 486.95 | | | 216.95 | | | 210.91 | | | 204.94 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 324.41 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.564 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 26.82 | 90.92 | 90.92 | 38.67 | 46.73 | 46.73 | 4.95 | 60.90 | 58.46 | 0.45 | 37.10 | 32.96 |
| Stops [stops/h] | 735.03 | 3106.32 | 3106.32 | 1476.35 | 927.76 | 927.76 | 53.18 | 1060.88 | 975.42 | 7.63 | 962.59 | 754.45 |
| Fuel consumption [US gal/h] | 41.28 | 221.20 | 221.20 | 103.97 | 37.77 | 37.77 | 1.96 | 51.97 | 46.12 | 0.26 | 47.06 | 33.19 |
| CO [g/h] | 2885.76 | 15461.7 | 15461.7 | 7267.43 | 2640.18 | 2640.18 | 136.98 | 3632.50 | 3223.47 | 18.42 | 3289.45 | 2319.76 |
| NOx [g/h] | 561.46 | 3008.30 | 3008.30 | 1413.98 | 513.68 | 513.68 | 26.65 | 706.75 | 627.17 | 3.58 | 640.01 | 451.34 |
| VOC [g/h] | 668.80 | 3583.41 | 3583.41 | 1684.30 | 611.89 | 611.89 | 31.75 | 841.87 | 747.07 | 4.27 | 762.36 | 537.63 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 731 | 792 | 438 | 438 |
| d_b, Bicycle Delay [s] | 26.18 | 23.70 | 39.62 | 39.62 |
| l_b,int, Bicycle LOS Score for Intersection | 4.249 | 3.454 | 2.657 | 2.472 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 4.232 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 2742 | 197 | 423 | 1136 | 15 | 25 | 0 | 56 | 520 | 0 | 415 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 2742 | 197 | 423 | 1136 | 15 | 25 | 0 | 56 | 520 | 0 | 415 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 722 | 52 | 111 | 299 | 4 | 7 | 0 | 15 | 137 | 0 | 109 |
| Total Analysis Volume [veh/h] | 39 | 2886 | 207 | 445 | 1196 | 16 | 26 | 0 | 59 | 547 | 0 | 437 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.07 | 0.03 | 0.00 | 4.29 | 0.01 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 4.23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.76 | 0.00 | 0.00 | 1566.39 | 0.00 | 0.00 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 |
| Movement LOS | B | A | A | F | A | A | F | F | F | F | F | F |
| 95th-Percentile Queue Length [veh/ln] | 0.22 | 0.00 | 0.00 | 46.28 | 0.00 | 0.00 | 5.15 | 9.66 | 9.66 | 71.25 | 57.48 | 57.48 |
| 95th-Percentile Queue Length [ft/ln] | 5.48 | 0.00 | 0.00 | 1156.98 | 0.00 | 0.00 | 128.63 | 241.61 | 241.61 | 1781.34 | 1436.90 | 1436.90 |
| d_A, Approach Delay [s/veh] | 0.15 | | | 420.66 | | | 10000.00 | | | 10000.00 | | |
| Approach LOS | A | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1943.92 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 23.095 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 337 | 0 | 225 | 0 | 0 | 272 | 60 | 400 | 364 | 294 | 409 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 337 | 0 | 225 | 0 | 0 | 272 | 60 | 400 | 364 | 294 | 409 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 89 | 0 | 59 | 0 | 0 | 72 | 16 | 105 | 96 | 77 | 108 | 0 |
| Total Analysis Volume [veh/h] | 355 | 0 | 237 | 0 | 0 | 286 | 63 | 421 | 383 | 309 | 431 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 23.10 | 0.00 | 0.48 | 0.00 | 0.00 | 0.46 | 0.06 | 0.00 | 0.00 | 0.38 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 10000.0 | 10000.0 | 10000.0 | 306.36 | 139.57 | 15.55 | 8.28 | 0.00 | 0.00 | 10.02 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | C | A | A | A | B | A | A |
| 95th-Percentile Queue Length [veh/ln] | 73.87 | 73.87 | 73.87 | 2.40 | 2.40 | 2.40 | 0.12 | 0.12 | 0.12 | 0.78 | 0.78 | 0.78 |
| 95th-Percentile Queue Length [ft/ln] | 1846.67 | 1846.67 | 1846.67 | 59.99 | 59.99 | 59.99 | 2.99 | 2.99 | 2.99 | 19.46 | 19.46 | 19.46 |
| d_A, Approach Delay [s/veh] | 10000.00 | | | 15.55 | | | 0.60 | | | 4.18 | | |
| Approach LOS | F | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 2385.54 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 78.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.063 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 36 | 2324 | 231 | 176 | 1584 | 72 | 79 | 5 | 60 | 261 | 21 | 480 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 36 | 2324 | 231 | 176 | 1584 | 72 | 79 | 5 | 60 | 261 | 21 | 480 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 612 | 61 | 46 | 417 | 19 | 21 | 1 | 16 | 69 | 6 | 126 |
| Total Analysis Volume [veh/h] | 38 | 2446 | 243 | 185 | 1667 | 76 | 83 | 5 | 63 | 275 | 22 | 505 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 125 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 20 | 0 | 0 | 20 | 0 |
| Amber [s] | 4.0 | 5.5 | 0.0 | 4.0 | 5.5 | 0.0 | 0.0 | 5.0 | 0.0 | 0.0 | 5.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 0.0 | 3.0 | 4.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 12 | 75 | 0 | 16 | 79 | 0 | 0 | 34 | 0 | 0 | 34 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.0 | 3.0 | 0.0 | 2.0 | 3.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 4 | 69 | 69 | 11 | 76 | 76 | 28 | 28 | 28 | 28 | 28 |
| g / C, Green / Cycle | 0.03 | 0.55 | 0.55 | 0.09 | 0.61 | 0.61 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.64 | 0.13 | 0.10 | 0.44 | 0.04 | 0.05 | 0.04 | 0.15 | 0.01 | 0.27 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 54 | 2082 | 1041 | 158 | 2302 | 1151 | 416 | 426 | 380 | 426 | 426 |
| d1, Uniform Delay [s] | 60.06 | 28.25 | 14.64 | 57.00 | 17.30 | 10.11 | 39.46 | 39.03 | 44.42 | 38.08 | 48.50 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.09 | 0.50 | 0.50 | 0.04 | 0.04 | 0.13 | 0.04 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 5.96 | 84.01 | 0.53 | 88.29 | 2.02 | 0.11 | 0.09 | 0.06 | 3.12 | 0.02 | 105.38 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.70 | 1.17 | 0.23 | 1.17 | 0.72 | 0.07 | 0.20 | 0.16 | 0.72 | 0.05 | 1.19 |
| d, Delay for Lane Group [s/veh] | 66.02 | 112.26 | 15.17 | 145.29 | 19.32 | 10.22 | 39.54 | 39.10 | 47.54 | 38.10 | 153.88 |
| Lane Group LOS | E | F | B | F | B | B | D | D | D | D | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.23 | 50.66 | 3.34 | 8.65 | 14.64 | 0.78 | 2.06 | 1.67 | 7.99 | 0.53 | 25.41 |
| 50th-Percentile Queue Length [ft/ln] | 30.82 | 1266.57 | 83.53 | 216.16 | 365.91 | 19.53 | 51.60 | 41.81 | 199.80 | 13.19 | 635.14 |
| 95th-Percentile Queue Length [veh/ln] | 2.22 | 70.61 | 6.01 | 14.22 | 20.91 | 1.41 | 3.72 | 3.01 | 12.63 | 0.95 | 36.93 |
| 95th-Percentile Queue Length [ft/ln] | 55.47 | 1765.23 | 150.35 | 355.41 | 522.76 | 35.16 | 92.88 | 75.26 | 315.70 | 23.74 | 923.36 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 66.02 | 112.26 | 15.17 | 145.29 | 19.32 | 10.22 | 39.54 | 39.10 | 39.10 | 47.54 | 38.10 | 153.88 |
| Movement LOS | E | F | B | F | B | B | D | D | D | D | D | F |
| d_A, Approach Delay [s/veh] | 102.96 | | | 31.05 | | | 39.34 | | | 114.24 | | |
| Approach LOS | F | | | C | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 78.14 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 1.063 | | | | | | | | | | | |

**Emissions**

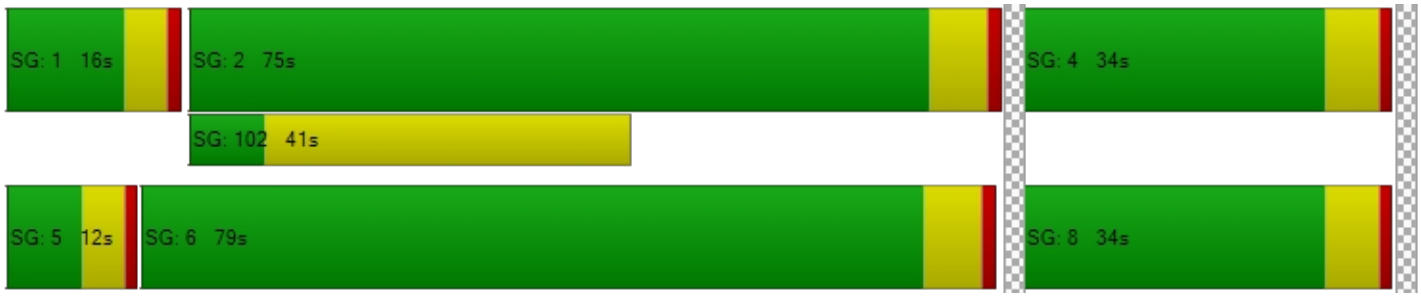
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.01 | 193.84 | 19.26 | 4.37 | 39.38 | 1.80 | 3.57 | 2.92 | 17.04 | 1.36 | 31.29 |
| Stops [stops/h] | 35.50 | 2918.19 | 96.22 | 249.02 | 843.05 | 22.50 | 59.45 | 48.17 | 230.16 | 15.20 | 731.68 |
| Fuel consumption [US gal/h] | 1.40 | 127.00 | 3.54 | 11.12 | 26.53 | 0.72 | 1.38 | 1.12 | 5.53 | 0.37 | 24.12 |
| CO [g/h] | 97.73 | 8877.43 | 247.10 | 777.48 | 1854.76 | 50.11 | 96.43 | 78.21 | 386.66 | 25.77 | 1685.96 |
| NOx [g/h] | 19.01 | 1727.22 | 48.08 | 151.27 | 360.87 | 9.75 | 18.76 | 15.22 | 75.23 | 5.01 | 328.03 |
| VOC [g/h] | 22.65 | 2057.43 | 57.27 | 180.19 | 429.86 | 11.61 | 22.35 | 18.13 | 89.61 | 5.97 | 390.74 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 51.98 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.548 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1096 | 1160 | 448 | 448 |
| d_b, Bicycle Delay [s] | 12.77 | 11.03 | 37.64 | 37.64 |
| l_b,int, Bicycle LOS Score for Intersection | 3.809 | 3.150 | 1.809 | 2.883 |
| Bicycle LOS | D | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 86.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.015 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 42 | 1490 | 97 | 379 | 1493 | 89 | 552 | 329 | 79 | 253 | 111 | 455 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 42 | 1490 | 97 | 379 | 1493 | 89 | 552 | 329 | 79 | 253 | 111 | 455 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 392 | 26 | 100 | 393 | 23 | 145 | 87 | 21 | 67 | 29 | 120 |
| Total Analysis Volume [veh/h] | 44 | 1568 | 102 | 399 | 1572 | 94 | 581 | 346 | 83 | 266 | 117 | 479 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 105 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 39 | 0 | 20 | 49 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 44 | 44 | 15 | 56 | 56 | 29 | 29 | 29 | 29 | 29 |
| g / C, Green / Cycle | 0.03 | 0.42 | 0.42 | 0.15 | 0.53 | 0.53 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.41 | 0.05 | 0.22 | 0.41 | 0.05 | 0.32 | 0.23 | 0.15 | 0.06 | 0.25 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 62 | 1587 | 793 | 262 | 2010 | 1005 | 445 | 519 | 152 | 519 | 519 |
| d1, Uniform Delay [s] | 50.17 | 30.32 | 18.82 | 44.85 | 19.88 | 12.26 | 36.87 | 35.85 | 30.31 | 29.57 | 37.11 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.29 | 0.08 | 0.04 | 0.04 | 0.13 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 10.55 | 19.98 | 0.33 | 253.12 | 3.12 | 0.18 | 146.55 | 2.44 | 341.42 | 0.08 | 8.91 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.71 | 0.99 | 0.13 | 1.52 | 0.78 | 0.09 | 1.30 | 0.83 | 1.75 | 0.23 | 0.92 |
| d, Delay for Lane Group [s/veh] | 60.73 | 50.30 | 19.16 | 297.97 | 23.00 | 12.45 | 183.43 | 38.29 | 371.72 | 29.65 | 46.01 |
| Lane Group LOS | E | D | B | F | C | B | F | D | F | C | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.32 | 23.20 | 1.59 | 25.21 | 15.40 | 1.12 | 28.98 | 10.51 | 17.42 | 2.30 | 13.03 |
| 50th-Percentile Queue Length [ft/ln] | 33.04 | 580.11 | 39.80 | 630.15 | 385.08 | 28.09 | 724.38 | 262.85 | 435.54 | 57.46 | 325.73 |
| 95th-Percentile Queue Length [veh/ln] | 2.38 | 31.10 | 2.87 | 39.28 | 21.84 | 2.02 | 43.62 | 15.83 | 30.23 | 4.14 | 18.95 |
| 95th-Percentile Queue Length [ft/ln] | 59.48 | 777.61 | 71.64 | 981.98 | 545.99 | 50.56 | 1090.53 | 395.80 | 755.82 | 103.42 | 473.72 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 60.73 | 50.30 | 19.16 | 297.97 | 23.00 | 12.45 | 183.43 | 38.29 | 38.29 | 371.72 | 29.65 | 46.01 |
| Movement LOS | E | D | B | F | C | B | F | D | D | F | C | D |
| d_A, Approach Delay [s/veh] | 48.72 | | | 75.65 | | | 121.78 | | | 144.30 | | |
| Approach LOS | D | | | E | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 86.20 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.015 | | | | | | | | | | | |

**Emissions**

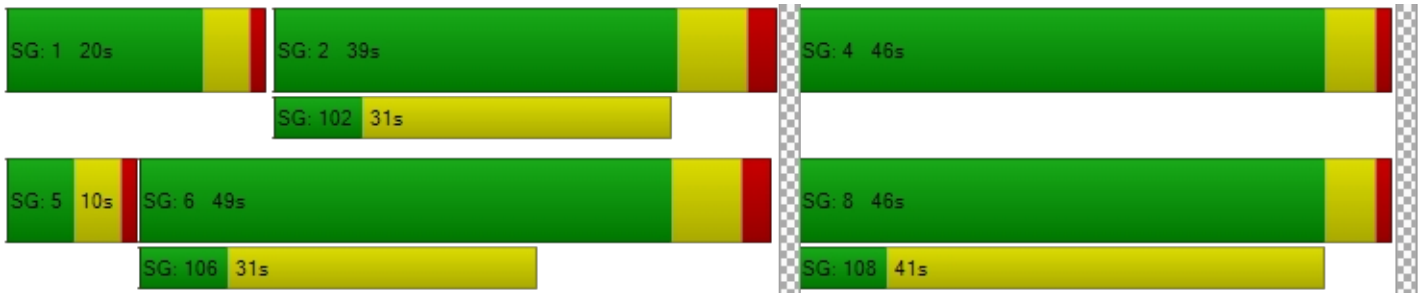
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.30 | 81.91 | 5.33 | 26.22 | 103.32 | 6.18 | 32.10 | 23.70 | 9.37 | 4.12 | 16.88 |
| Stops [stops/h] | 45.32 | 1591.16 | 54.58 | 864.21 | 1056.22 | 38.52 | 993.43 | 360.48 | 597.31 | 78.80 | 446.71 |
| Fuel consumption [US gal/h] | 0.89 | 28.21 | 0.92 | 30.04 | 17.45 | 0.71 | 28.49 | 6.31 | 23.80 | 1.31 | 7.65 |
| CO [g/h] | 62.12 | 1972.03 | 64.21 | 2100.02 | 1219.49 | 49.30 | 1991.68 | 441.06 | 1663.84 | 91.64 | 534.58 |
| NOx [g/h] | 12.09 | 383.69 | 12.49 | 408.59 | 237.27 | 9.59 | 387.51 | 85.81 | 323.72 | 17.83 | 104.01 |
| VOC [g/h] | 14.40 | 457.04 | 14.88 | 486.70 | 282.63 | 11.43 | 461.59 | 102.22 | 385.61 | 21.24 | 123.89 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 42.08 | 42.08 | 42.08 |
| I_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 4.049 | 2.359 | 2.555 |
| Crosswalk LOS | F | D | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 600 | 790 | 781 | 781 |
| d_b, Bicycle Delay [s] | 25.73 | 19.20 | 19.50 | 19.50 |
| I_b,int, Bicycle LOS Score for Intersection | 2.974 | 3.263 | 3.226 | 2.982 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 30.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.323 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 64 | 508 | 0 | 831 | 299 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 64 | 508 | 0 | 831 | 299 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 134 | 0 | 219 | 79 | 0 |
| Total Analysis Volume [veh/h] | 67 | 535 | 0 | 875 | 315 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.32 | 0.74 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 30.44 | 22.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | D | C | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 1.33 | 6.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 33.28 | 164.99 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 23.44 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.87 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.674 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 792 | 103 | 299 | 7 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 792 | 103 | 299 | 7 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 208 | 27 | 79 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 834 | 108 | 315 | 7 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.67 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 12.53 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | B | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 4.82 | 4.82 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 120.56 | 120.56 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 11.10 | | 0.00 | |
| Approach LOS | A | | B | | A | |
| d_I, Intersection Delay [s/veh] | 8.27 | | | | | |
| Intersection LOS | B | | | | | |

# Appendix G

Horizon Year (2040)

With Project Conditions

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 293.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.516 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 206 | 1093 | 9 | 378 | 2624 | 45 | 97 | 984 | 351 | 13 | 1202 | 625 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 206 | 1093 | 9 | 378 | 2624 | 45 | 97 | 984 | 351 | 13 | 1202 | 625 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 288 | 2 | 99 | 691 | 12 | 26 | 259 | 92 | 3 | 316 | 164 |
| Total Analysis Volume [veh/h] | 217 | 1151 | 9 | 398 | 2762 | 47 | 102 | 1036 | 369 | 14 | 1265 | 658 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 8 | 7 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 30 | 30 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 14 | 47 | 47 | 28 | 61 | 61 | 10 | 45 | 45 | 10 | 45 | 45 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 |
| Vehicle Extension [s] | 2.5 | 3.5 | 3.5 | 2.5 | 3.5 | 3.5 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 9 | 40 | 40 | 23 | 54 | 54 | 5 | 41 | 41 | 2 | 38 | 38 |
| g / C, Green / Cycle | 0.07 | 0.30 | 0.30 | 0.18 | 0.41 | 0.41 | 0.04 | 0.31 | 0.31 | 0.02 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.31 | 0.30 | 0.22 | 0.74 | 0.74 | 0.06 | 0.38 | 0.36 | 0.01 | 0.51 | 0.51 |
| s, saturation flow rate [veh/h] | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 129 | 577 | 577 | 323 | 782 | 782 | 73 | 595 | 595 | 29 | 548 | 548 |
| d1, Uniform Delay [s] | 60.35 | 45.25 | 45.25 | 53.35 | 38.25 | 38.25 | 62.35 | 44.64 | 44.64 | 63.42 | 46.25 | 46.25 |
| k, delay calibration | 0.08 | 0.41 | 0.41 | 0.40 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 313.75 | 35.49 | 34.86 | 124.91 | 363.42 | 363.42 | 188.52 | 113.15 | 82.85 | 9.02 | 347.78 | 346.05 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.69 | 1.01 | 1.00 | 1.23 | 1.80 | 1.80 | 1.39 | 1.22 | 1.14 | 0.48 | 1.76 | 1.75 |
| d, Delay for Lane Group [s/veh] | 374.10 | 80.74 | 80.11 | 178.26 | 401.67 | 401.67 | 250.87 | 157.79 | 127.49 | 72.45 | 394.03 | 392.30 |
| Lane Group LOS | F | F | F | F | F | F | F | F | F | E | F | F |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 15.28 | 23.01 | 22.91 | 21.17 | 101.52 | 101.52 | 6.19 | 36.69 | 31.68 | 0.52 | 69.64 | 69.38 |
| 50th-Percentile Queue Length [ft/ln] | 382.08 | 575.37 | 572.85 | 529.34 | 2538.11 | 2538.11 | 154.63 | 917.33 | 792.11 | 12.93 | 1741.04 | 1734.48 |
| 95th-Percentile Queue Length [veh/ln] | 24.92 | 31.00 | 30.84 | 31.75 | 158.81 | 158.81 | 11.05 | 52.62 | 44.53 | 0.93 | 107.67 | 107.23 |
| 95th-Percentile Queue Length [ft/ln] | 623.02 | 775.09 | 770.95 | 793.72 | 3970.29 | 3970.29 | 276.28 | 1315.53 | 1113.35 | 23.28 | 2691.67 | 2680.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 374.10 | 80.43 | 80.11 | 178.26 | 401.67 | 401.67 | 250.87 | 148.70 | 127.49 | 72.45 | 393.62 | 392.30 |
| Movement LOS | F | F | F | F | F | F | F | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 126.71 | | | 373.94 | | | 150.42 | | | 390.85 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 293.66 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.516 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 37.16 | 37.08 | 22.90 | 80.82 | 80.82 | 9.53 | 67.79 | 63.54 | 0.89 | 61.37 | 61.23 |
| Stops [stops/h] | 423.23 | 637.33 | 634.55 | 586.35 | 2811.45 | 2811.45 | 171.28 | 1016.12 | 877.41 | 14.32 | 1928.54 | 1921.26 |
| Fuel consumption [US gal/h] | 26.35 | 24.90 | 24.74 | 28.18 | 179.69 | 179.69 | 8.71 | 44.43 | 36.06 | 0.50 | 115.04 | 114.39 |
| CO [g/h] | 1841.63 | 1740.35 | 1729.16 | 1969.73 | 12560.0 | 12560.0 | 608.59 | 3105.36 | 2520.28 | 35.11 | 8041.27 | 7996.05 |
| NOx [g/h] | 358.31 | 338.61 | 336.43 | 383.24 | 2443.73 | 2443.73 | 118.41 | 604.19 | 490.35 | 6.83 | 1564.54 | 1555.74 |
| VOC [g/h] | 426.82 | 403.34 | 400.75 | 456.50 | 2910.92 | 2910.92 | 141.05 | 719.70 | 584.10 | 8.14 | 1863.64 | 1853.16 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 608 | 823 | 577 | 577 |
| d_b, Bicycle Delay [s] | 31.50 | 22.51 | 32.91 | 32.91 |
| l_b,int, Bicycle LOS Score for Intersection | 2.696 | 4.205 | 2.803 | 3.158 |
| Bicycle LOS | B | D | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.608 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1131 | 559 | 455 | 2255 | 29 | 5 | 0 | 29 | 349 | 0 | 437 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1131 | 559 | 455 | 2255 | 29 | 5 | 0 | 29 | 349 | 0 | 437 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 298 | 147 | 120 | 593 | 8 | 1 | 0 | 8 | 92 | 0 | 115 |
| Total Analysis Volume [veh/h] | 75 | 1191 | 588 | 479 | 2374 | 31 | 5 | 0 | 31 | 367 | 0 | 460 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.38 | 0.01 | 0.01 | 1.39 | 0.02 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 1.61 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 34.37 | 0.00 | 0.00 | 221.41 | 0.00 | 0.00 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 |
| Movement LOS | D | A | A | F | A | A | F | F | F | F | F | F |
| 95th-Percentile Queue Length [veh/ln] | 1.68 | 0.00 | 0.00 | 24.16 | 0.00 | 0.00 | 1.72 | 5.86 | 5.86 | 48.70 | 60.36 | 60.36 |
| 95th-Percentile Queue Length [ft/ln] | 41.92 | 0.00 | 0.00 | 603.93 | 0.00 | 0.00 | 42.93 | 146.48 | 146.48 | 1217.52 | 1508.95 | 1508.95 |
| d_A, Approach Delay [s/veh] | 1.39 | | | 36.77 | | | 10000.00 | | | 10000.00 | | |
| Approach LOS | A | | | E | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1560.19 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 913.060 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 417 | 0 | 201 | 0 | 0 | 82 | 334 | 604 | 416 | 405 | 301 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 417 | 0 | 201 | 0 | 0 | 82 | 334 | 604 | 416 | 405 | 301 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 110 | 0 | 53 | 0 | 0 | 22 | 88 | 159 | 109 | 107 | 79 | 0 |
| Total Analysis Volume [veh/h] | 439 | 0 | 212 | 0 | 0 | 86 | 352 | 636 | 438 | 426 | 317 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Stop | Stop | Free | Free |
|---|---|---|---|---|
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 913.06 | 0.00 | 0.59 | 0.00 | 0.00 | 0.12 | 0.28 | 0.01 | 0.00 | 0.66 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 5968.37 | 10.65 | 8.48 | 0.00 | 0.00 | 13.75 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | B | A | A | A | B | A | A |
| 95th-Percentile Queue Length [veh/ln] | 84.19 | 84.19 | 84.19 | 0.40 | 0.40 | 0.40 | 0.80 | 0.80 | 0.80 | 2.43 | 2.43 | 2.43 |
| 95th-Percentile Queue Length [ft/ln] | 2104.64 | 2104.64 | 2104.64 | 10.07 | 10.07 | 10.07 | 20.02 | 20.02 | 20.02 | 60.72 | 60.72 | 60.72 |
| d_A, Approach Delay [s/veh] | 10000.00 | | | 10.65 | | | 2.09 | | | 7.88 | | |
| Approach LOS | F | | | B | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 2243.55 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 35.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.865 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 2046 | 319 | 178 | 2076 | 123 | 36 | 11 | 83 | 238 | 2 | 56 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 2046 | 319 | 178 | 2076 | 123 | 36 | 11 | 83 | 238 | 2 | 56 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 538 | 84 | 47 | 546 | 32 | 9 | 3 | 22 | 63 | 1 | 15 |
| Total Analysis Volume [veh/h] | 33 | 2154 | 336 | 187 | 2185 | 129 | 38 | 12 | 87 | 251 | 2 | 59 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 95 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | 5.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 52 | 52 | 15 | 57 | 57 | 28 | 28 | 28 | 28 | 28 | 28 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.0 | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 3 | 52 | 52 | 10 | 59 | 59 | 15 | 15 | 15 | 15 | 15 |
| g / C, Green / Cycle | 0.03 | 0.55 | 0.55 | 0.11 | 0.63 | 0.63 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.57 | 0.18 | 0.10 | 0.58 | 0.07 | 0.02 | 0.05 | 0.14 | 0.00 | 0.03 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 56 | 2094 | 1047 | 189 | 2375 | 1187 | 332 | 303 | 252 | 303 | 303 |
| d1, Uniform Delay [s] | 45.41 | 21.33 | 11.64 | 42.43 | 15.72 | 7.17 | 34.27 | 35.39 | 38.99 | 33.59 | 34.63 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 | 0.04 | 0.04 | 0.05 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 3.56 | 27.46 | 0.81 | 15.70 | 7.26 | 0.18 | 0.06 | 0.23 | 17.09 | 0.00 | 0.12 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.59 | 1.03 | 0.32 | 0.99 | 0.92 | 0.11 | 0.11 | 0.33 | 1.00 | 0.01 | 0.19 |
| d, Delay for Lane Group [s/veh] | 48.97 | 48.79 | 12.45 | 58.13 | 22.98 | 7.35 | 34.33 | 35.63 | 56.08 | 33.59 | 34.74 |
| Lane Group LOS | D | F | B | E | C | A | C | D | E | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 0.77 | 25.67 | 3.33 | 4.87 | 16.85 | 0.84 | 0.74 | 1.99 | 6.69 | 0.04 | 1.16 |
| 50th-Percentile Queue Length [ft/ln] | 19.31 | 641.78 | 83.31 | 121.66 | 421.36 | 20.98 | 18.43 | 49.72 | 167.36 | 0.95 | 28.94 |
| 95th-Percentile Queue Length [veh/ln] | 1.39 | 34.78 | 6.00 | 8.48 | 23.59 | 1.51 | 1.33 | 3.58 | 10.94 | 0.07 | 2.08 |
| 95th-Percentile Queue Length [ft/ln] | 34.76 | 869.48 | 149.95 | 212.11 | 589.68 | 37.77 | 33.17 | 89.49 | 273.44 | 1.71 | 52.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 48.97 | 48.79 | 12.45 | 58.13 | 22.98 | 7.35 | 34.33 | 35.63 | 35.63 | 56.08 | 33.59 | 34.74 |
| Movement LOS | D | F | B | E | C | A | C | D | D | E | C | C |
| d_A, Approach Delay [s/veh] | 43.96 | | | 24.81 | | | 35.27 | | | 51.90 | | |
| Approach LOS | D | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 35.44 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.865 | | | | | | | | | | | |

**Emissions**

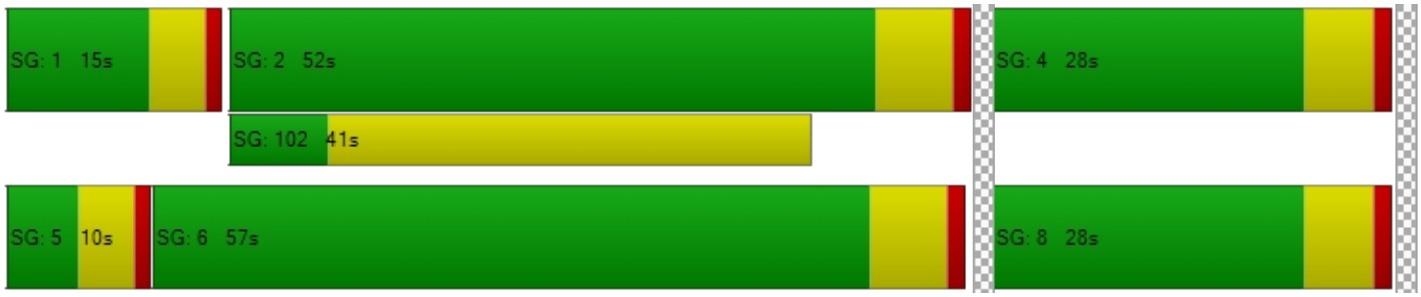
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.62 | 170.70 | 26.63 | 4.42 | 51.61 | 3.05 | 1.63 | 4.25 | 15.55 | 0.12 | 3.66 |
| Stops [stops/h] | 29.27 | 1945.62 | 126.27 | 184.42 | 1277.39 | 31.81 | 27.93 | 75.36 | 253.68 | 1.44 | 43.87 |
| Fuel consumption [US gal/h] | 1.07 | 70.23 | 4.55 | 6.44 | 40.22 | 1.00 | 0.60 | 1.61 | 5.91 | 0.03 | 0.98 |
| CO [g/h] | 74.46 | 4908.96 | 318.20 | 450.12 | 2811.43 | 69.92 | 41.83 | 112.57 | 413.33 | 2.26 | 68.43 |
| NOx [g/h] | 14.49 | 955.11 | 61.91 | 87.58 | 547.00 | 13.60 | 8.14 | 21.90 | 80.42 | 0.44 | 13.31 |
| VOC [g/h] | 17.26 | 1137.70 | 73.75 | 104.32 | 651.58 | 16.21 | 9.69 | 26.09 | 95.79 | 0.52 | 15.86 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 37.14 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.409 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 958 | 1063 | 463 | 463 |
| d_b, Bicycle Delay [s] | 12.90 | 10.42 | 28.05 | 28.05 |
| l_b,int, Bicycle LOS Score for Intersection | 3.641 | 3.623 | 1.786 | 2.074 |
| Bicycle LOS | D | D | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 57.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.957 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 473 | 25 | 68 | 495 | 128 | 22 | 22 | 3 | 20 | 53 | 125 |
| Total Analysis Volume [veh/h] | 59 | 1893 | 99 | 273 | 1981 | 511 | 86 | 89 | 14 | 80 | 213 | 499 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 40 | 40 | 40 | 40 | 40 | 40 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 7 | 7 | 0 | 0 | 0 | 7 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 24 | 24 | 0 | 24 | 24 | 0 | 0 | 0 | 34 | 34 | 34 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 69 | 69 | 19 | 78 | 78 | 42 | 42 | 42 | 42 | 42 | 42 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.5 | 5.0 | 5.0 | 2.5 | 5.0 | 5.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 5 | 63 | 63 | 14 | 72 | 72 | 36 | 36 | 36 | 36 | 36 |
| g / C, Green / Cycle | 0.04 | 0.48 | 0.48 | 0.11 | 0.55 | 0.55 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.50 | 0.05 | 0.15 | 0.52 | 0.27 | 0.05 | 0.05 | 0.04 | 0.11 | 0.26 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 73 | 1829 | 914 | 198 | 2092 | 1046 | 366 | 525 | 457 | 525 | 525 |
| d1, Uniform Delay [s] | 61.83 | 33.72 | 18.46 | 57.85 | 27.45 | 17.97 | 35.73 | 35.97 | 35.61 | 38.32 | 46.14 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.39 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.31 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.93 | 30.77 | 0.24 | 193.21 | 10.65 | 1.63 | 0.12 | 0.07 | 0.07 | 0.19 | 20.92 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 1.04 | 0.11 | 1.38 | 0.95 | 0.49 | 0.23 | 0.20 | 0.18 | 0.41 | 0.95 |
| d, Delay for Lane Group [s/veh] | 75.76 | 64.49 | 18.70 | 251.06 | 38.09 | 19.60 | 35.85 | 36.04 | 35.67 | 38.51 | 67.06 |
| Lane Group LOS | E | F | B | F | D | B | D | D | D | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.22 | 35.70 | 1.71 | 17.13 | 30.66 | 9.79 | 2.11 | 2.54 | 1.96 | 5.61 | 18.80 |
| 50th-Percentile Queue Length [ft/ln] | 55.52 | 892.52 | 42.84 | 428.37 | 766.60 | 244.70 | 52.84 | 63.59 | 48.91 | 140.23 | 469.97 |
| 95th-Percentile Queue Length [veh/ln] | 4.00 | 46.79 | 3.08 | 26.89 | 39.75 | 14.92 | 3.80 | 4.58 | 3.52 | 9.49 | 25.91 |
| 95th-Percentile Queue Length [ft/ln] | 99.94 | 1169.76 | 77.10 | 672.29 | 993.64 | 372.97 | 95.12 | 114.47 | 88.05 | 237.34 | 647.74 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 75.76 | 64.49 | 18.70 | 251.06 | 38.09 | 19.60 | 35.85 | 36.04 | 36.04 | 35.67 | 38.51 | 67.06 |
| Movement LOS | E | F | B | F | D | B | D | D | D | D | D | E |
| d_A, Approach Delay [s/veh] | 62.61 | | | 55.70 | | | 35.96 | | | 56.21 | | |
| Approach LOS | E | | | E | | | D | | | E | | |
| d_I, Intersection Delay [s/veh] | 57.57 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.957 | | | | | | | | | | | |

**Emissions**

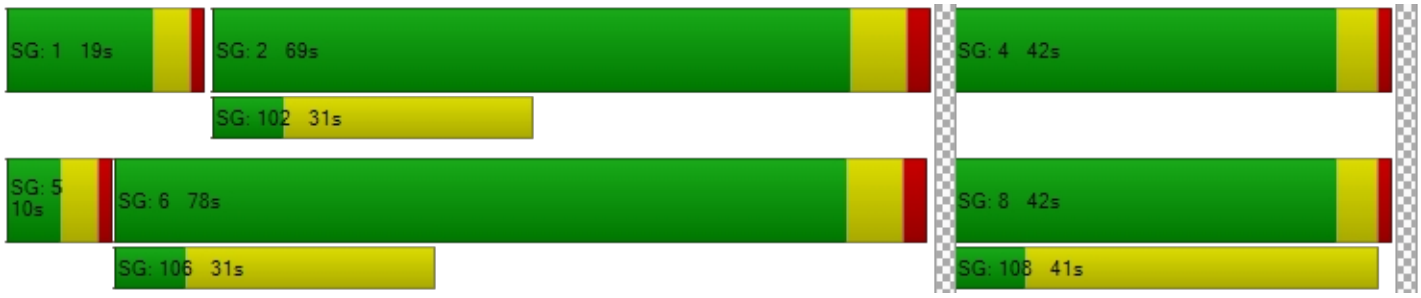
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.08 | 98.89 | 5.17 | 17.94 | 130.20 | 33.59 | 4.75 | 5.69 | 2.82 | 7.50 | 17.58 |
| Stops [stops/h] | 61.50 | 1977.27 | 47.45 | 474.50 | 1698.32 | 271.05 | 58.54 | 70.44 | 54.18 | 155.33 | 520.58 |
| Fuel consumption [US gal/h] | 1.38 | 39.84 | 0.85 | 17.30 | 30.10 | 4.92 | 1.15 | 1.38 | 1.00 | 2.84 | 10.41 |
| CO [g/h] | 96.20 | 2784.53 | 59.53 | 1209.60 | 2103.92 | 343.82 | 80.13 | 96.38 | 69.63 | 198.24 | 727.57 |
| NOx [g/h] | 18.72 | 541.77 | 11.58 | 235.34 | 409.35 | 66.89 | 15.59 | 18.75 | 13.55 | 38.57 | 141.56 |
| VOC [g/h] | 22.29 | 645.34 | 13.80 | 280.34 | 487.60 | 79.68 | 18.57 | 22.34 | 16.14 | 45.94 | 168.62 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.445 | 2.274 | 2.454 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 946 | 1085 | 569 | 569 |
| d_b, Bicycle Delay [s] | 18.05 | 13.62 | 33.27 | 33.27 |
| l_b,int, Bicycle LOS Score for Intersection | 3.252 | 3.841 | 1.871 | 2.866 |
| Bicycle LOS | C | D | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.5 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 17 | 810 | 0 | 345 | 37 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 17 | 810 | 0 | 345 | 37 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 213 | 0 | 91 | 10 | 0 |
| Total Analysis Volume [veh/h] | 18 | 853 | 0 | 363 | 39 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.03 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.14 | 22.52 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | C | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.09 | 9.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.30 | 247.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 22.29 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 15.25 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 7.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.195 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 289 | 73 | 37 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 289 | 73 | 37 | 8 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 76 | 19 | 10 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 304 | 77 | 39 | 8 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 7.71 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.61 | 0.61 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 15.19 | 15.19 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 6.15 | | 0.00 | |
| Approach LOS | A | | A | | A | |
| d_I, Intersection Delay [s/veh] | 5.48 | | | | | |
| Intersection LOS | A | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Project Access Driveway 1 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 36.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.009 |

**Intersection Setup**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1 | 1 | 801 | 4 | 5 | 705 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1 | 1 | 801 | 4 | 5 | 705 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 211 | 1 | 1 | 186 |
| Total Analysis Volume [veh/h] | 1 | 1 | 843 | 4 | 5 | 742 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 |
| d_M, Delay for Movement [s/veh] | 36.29 | 15.16 | 0.00 | 0.00 | 9.56 | 0.00 |
| Movement LOS | E | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 0.86 | 0.86 | 0.00 | 0.00 | 0.21 | 0.21 |
| d_A, Approach Delay [s/veh] | 25.73 | | 0.00 | | 0.06 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Project Access Driveway 2 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 34.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.024 |

**Intersection Setup**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 799 | 3 | 0 | 707 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 799 | 3 | 0 | 707 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 210 | 1 | 0 | 186 |
| Total Analysis Volume [veh/h] | 3 | 0 | 841 | 3 | 0 | 744 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 34.41 | 15.60 | 0.00 | 0.00 | 9.54 | 0.00 |
| Movement LOS | D | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.07 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.83 | 1.83 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 34.41 | | 0.00 | | 0.00 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: Project Access Driveway 3 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 34.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.024 |

**Intersection Setup**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 796 | 3 | 0 | 704 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 796 | 3 | 0 | 704 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 209 | 1 | 0 | 185 |
| Total Analysis Volume [veh/h] | 3 | 0 | 838 | 3 | 0 | 741 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 34.17 | 15.54 | 0.00 | 0.00 | 9.53 | 0.00 |
| Movement LOS | D | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.07 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.81 | 1.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 34.17 | | 0.00 | | 0.00 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Project Access Driveway 4 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 35.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.008 |

**Intersection Setup**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1 | 1 | 792 | 4 | 5 | 703 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1 | 1 | 792 | 4 | 5 | 703 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 208 | 1 | 1 | 185 |
| Total Analysis Volume [veh/h] | 1 | 1 | 834 | 4 | 5 | 740 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 0.01 |
| d_M, Delay for Movement [s/veh] | 35.80 | 15.04 | 0.00 | 0.00 | 9.53 | 0.00 |
| Movement LOS | E | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 0.85 | 0.85 | 0.00 | 0.00 | 0.21 | 0.21 |
| d_A, Approach Delay [s/veh] | 25.42 | | 0.00 | | 0.06 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 324.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.565 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 400 | 2627 | 74 | 638 | 1453 | 91 | 50 | 1051 | 163 | 7 | 688 | 356 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 400 | 2627 | 74 | 638 | 1453 | 91 | 50 | 1051 | 163 | 7 | 688 | 356 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 105 | 691 | 19 | 168 | 382 | 24 | 13 | 277 | 43 | 2 | 181 | 94 |
| Total Analysis Volume [veh/h] | 421 | 2765 | 78 | 672 | 1529 | 96 | 53 | 1106 | 172 | 7 | 724 | 375 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 8 | 7 | 4 | 4 | 5 | 2 | 2 | 1 | 6 | 6 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 45 | 30 | 30 | 30 | 30 | 30 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 25 | 55 | 55 | 29 | 59 | 59 | 10 | 36 | 36 | 10 | 36 | 36 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 | 5 | 28 | 28 |
| Vehicle Extension [s] | 2.5 | 3.5 | 3.5 | 2.5 | 3.5 | 3.5 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 |
| g_i, Effective Green Time [s] | 20 | 48 | 48 | 24 | 52 | 52 | 5 | 33 | 33 | 1 | 29 | 29 |
| g / C, Green / Cycle | 0.16 | 0.37 | 0.37 | 0.19 | 0.40 | 0.40 | 0.04 | 0.25 | 0.25 | 0.01 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.23 | 0.75 | 0.75 | 0.37 | 0.43 | 0.43 | 0.03 | 0.34 | 0.33 | 0.00 | 0.31 | 0.27 |
| s, saturation flow rate [veh/h] | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 281 | 694 | 694 | 336 | 753 | 753 | 69 | 476 | 476 | 17 | 422 | 422 |
| d1, Uniform Delay [s] | 54.85 | 41.25 | 41.25 | 52.85 | 39.25 | 39.25 | 61.97 | 48.72 | 48.72 | 64.01 | 50.57 | 50.57 |
| k, delay calibration | 0.20 | 0.50 | 0.50 | 0.50 | 0.48 | 0.48 | 0.08 | 0.50 | 0.50 | 0.08 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 231.31 | 476.43 | 476.43 | 459.24 | 55.81 | 55.81 | 12.77 | 179.78 | 156.31 | 10.94 | 185.38 | 121.21 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.50 | 2.05 | 2.05 | 2.00 | 1.08 | 1.08 | 0.77 | 1.37 | 1.32 | 0.41 | 1.38 | 1.23 |
| d, Delay for Lane Group [s/veh] | 286.16 | 517.68 | 517.68 | 512.09 | 95.06 | 95.06 | 74.74 | 228.51 | 205.03 | 74.94 | 235.95 | 171.78 |
| Lane Group LOS | F | F | F | F | F | F | E | F | F | E | F | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 26.79 | 112.30 | 112.30 | 53.31 | 33.55 | 33.55 | 1.92 | 38.38 | 35.27 | 0.28 | 34.76 | 27.24 |
| 50th-Percentile Queue Length [ft/ln] | 669.87 | 2807.42 | 2807.42 | 1332.81 | 838.83 | 838.83 | 48.01 | 959.42 | 881.86 | 6.89 | 869.01 | 681.10 |
| 95th-Percentile Queue Length [veh/ln] | 41.47 | 177.40 | 177.40 | 83.18 | 45.51 | 45.51 | 3.46 | 57.14 | 52.08 | 0.50 | 52.04 | 39.88 |
| 95th-Percentile Queue Length [ft/ln] | 1036.73 | 4435.08 | 4435.08 | 2079.48 | 1137.67 | 1137.67 | 86.42 | 1428.44 | 1302.04 | 12.41 | 1300.99 | 996.99 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 286.16 | 517.68 | 517.68 | 512.09 | 95.06 | 95.06 | 74.74 | 218.87 | 205.03 | 74.94 | 223.37 | 171.78 |
| Movement LOS | F | F | F | F | F | F | E | F | F | E | F | F |
| d_A, Approach Delay [s/veh] | 487.82 | | | 217.06 | | | 211.35 | | | 204.94 | | |
| Approach LOS | F | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 324.93 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.565 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 26.95 | 90.98 | 90.98 | 38.67 | 46.76 | 46.76 | 4.95 | 60.96 | 58.50 | 0.45 | 37.10 | 32.96 |
| Stops [stops/h] | 742.01 | 3109.76 | 3109.76 | 1476.35 | 929.16 | 929.16 | 53.18 | 1062.74 | 976.83 | 7.63 | 962.59 | 754.45 |
| Fuel consumption [US gal/h] | 41.83 | 221.57 | 221.57 | 103.97 | 37.85 | 37.85 | 1.96 | 52.10 | 46.21 | 0.26 | 47.06 | 33.19 |
| CO [g/h] | 2924.24 | 15487.6 | 15487.6 | 7267.43 | 2645.90 | 2645.90 | 136.98 | 3641.59 | 3230.11 | 18.42 | 3289.45 | 2319.76 |
| NOx [g/h] | 568.95 | 3013.33 | 3013.33 | 1413.98 | 514.80 | 514.80 | 26.65 | 708.52 | 628.46 | 3.58 | 640.01 | 451.34 |
| VOC [g/h] | 677.72 | 3589.41 | 3589.41 | 1684.30 | 613.21 | 613.21 | 31.75 | 843.97 | 748.61 | 4.27 | 762.36 | 537.63 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 731 | 792 | 438 | 438 |
| d_b, Bicycle Delay [s] | 26.18 | 23.70 | 39.62 | 39.62 |
| l_b,int, Bicycle LOS Score for Intersection | 4.252 | 3.455 | 2.658 | 2.472 |
| Bicycle LOS | E | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 4.295 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 2742 | 203 | 424 | 1136 | 15 | 25 | 0 | 56 | 526 | 0 | 419 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 2742 | 203 | 424 | 1136 | 15 | 25 | 0 | 56 | 526 | 0 | 419 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 722 | 53 | 112 | 299 | 4 | 7 | 0 | 15 | 138 | 0 | 110 |
| Total Analysis Volume [veh/h] | 39 | 2886 | 214 | 446 | 1196 | 16 | 26 | 0 | 59 | 554 | 0 | 441 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop | Stop |
|---|---|---|---|---|
| Flared Lane | | | No | No |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.07 | 0.03 | 0.00 | 4.33 | 0.01 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 | 4.29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.76 | 0.00 | 0.00 | 1583.85 | 0.00 | 0.00 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 | 10000.0 |
| Movement LOS | B | A | A | F | A | A | F | F | F | F | F | F |
| 95th-Percentile Queue Length [veh/ln] | 0.22 | 0.00 | 0.00 | 46.48 | 0.00 | 0.00 | 5.15 | 9.66 | 9.66 | 72.13 | 57.98 | 57.98 |
| 95th-Percentile Queue Length [ft/ln] | 5.48 | 0.00 | 0.00 | 1162.02 | 0.00 | 0.00 | 128.63 | 241.61 | 241.61 | 1803.26 | 1449.44 | 1449.44 |
| d_A, Approach Delay [s/veh] | 0.15 | | | 426.05 | | | 10000.00 | | | 10000.00 | | |
| Approach LOS | A | | | F | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 1957.95 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 10,000.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 25.188 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 337 | 0 | 226 | 0 | 0 | 272 | 60 | 407 | 364 | 298 | 419 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 337 | 0 | 226 | 0 | 0 | 272 | 60 | 407 | 364 | 298 | 419 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 89 | 0 | 59 | 0 | 0 | 72 | 16 | 107 | 96 | 78 | 110 | 0 |
| Total Analysis Volume [veh/h] | 355 | 0 | 238 | 0 | 0 | 286 | 63 | 428 | 383 | 314 | 441 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | | | | |
|---|---|---|---|---|
| Priority Scheme | Stop | Stop | Free | Free |
| Flared Lane | No | No | | |
| Storage Area [veh] | 0 | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 25.19 | 0.00 | 0.49 | 0.00 | 0.00 | 0.46 | 0.06 | 0.00 | 0.00 | 0.39 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 10000.0 | 10000.0 | 10000.0 | 334.21 | 149.26 | 15.80 | 8.30 | 0.00 | 0.00 | 10.07 | 0.00 | 0.00 |
| Movement LOS | F | F | F | F | F | C | A | A | A | B | A | A |
| 95th-Percentile Queue Length [veh/ln] | 74.23 | 74.23 | 74.23 | 2.45 | 2.45 | 2.45 | 0.12 | 0.12 | 0.12 | 0.80 | 0.80 | 0.80 |
| 95th-Percentile Queue Length [ft/ln] | 1855.84 | 1855.84 | 1855.84 | 61.30 | 61.30 | 61.30 | 2.99 | 2.99 | 2.99 | 20.09 | 20.09 | 20.09 |
| d_A, Approach Delay [s/veh] | 10000.00 | | | 15.80 | | | 0.60 | | | 4.19 | | |
| Approach LOS | F | | | C | | | A | | | A | | |
| d_I, Intersection Delay [s/veh] | 2367.70 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |

**Intersection Level Of Service Report**

**Intersection 4: U.S. Route 395 (NS) at Three Flags Road - Three Flags Court (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 78.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.065 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 207.00 | 225.00 | 100.00 | 225.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Th- T | | | Th- T | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 36 | 2330 | 232 | 176 | 1590 | 72 | 79 | 5 | 60 | 265 | 21 | 480 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 36 | 2330 | 232 | 176 | 1590 | 72 | 79 | 5 | 60 | 265 | 21 | 480 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 613 | 61 | 46 | 418 | 19 | 21 | 1 | 16 | 70 | 6 | 126 |
| Total Analysis Volume [veh/h] | 38 | 2453 | 244 | 185 | 1674 | 76 | 83 | 5 | 63 | 279 | 22 | 505 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 125 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 20 | 20 | 20 | 20 | 20 | 20 |
| Amber [s] | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | 5.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 34 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 12 | 75 | 75 | 16 | 79 | 79 | 34 | 34 | 34 | 34 | 34 | 34 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.0 | 3.0 | 3.0 | 2.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| L, Total Lost Time per Cycle [s] | 5.00 | 6.50 | 6.50 | 5.00 | 6.50 | 6.50 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 3.00 | 4.50 | 4.50 | 3.00 | 4.50 | 4.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| g_i, Effective Green Time [s] | 4 | 69 | 69 | 11 | 76 | 76 | 28 | 28 | 28 | 28 | 28 |
| g / C, Green / Cycle | 0.03 | 0.55 | 0.55 | 0.09 | 0.61 | 0.61 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.65 | 0.13 | 0.10 | 0.44 | 0.04 | 0.05 | 0.04 | 0.16 | 0.01 | 0.27 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 54 | 2082 | 1041 | 158 | 2302 | 1151 | 416 | 426 | 380 | 426 | 426 |
| d1, Uniform Delay [s] | 60.06 | 28.25 | 14.65 | 57.00 | 17.35 | 10.11 | 39.46 | 39.03 | 44.54 | 38.08 | 48.50 |
| k, delay calibration | 0.04 | 0.50 | 0.50 | 0.09 | 0.50 | 0.50 | 0.04 | 0.04 | 0.14 | 0.04 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 5.96 | 85.45 | 0.53 | 88.29 | 2.05 | 0.11 | 0.09 | 0.06 | 3.48 | 0.02 | 105.38 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.70 | 1.18 | 0.23 | 1.17 | 0.73 | 0.07 | 0.20 | 0.16 | 0.73 | 0.05 | 1.19 |
| d, Delay for Lane Group [s/veh] | 66.02 | 113.70 | 15.18 | 145.29 | 19.40 | 10.22 | 39.54 | 39.10 | 48.02 | 38.10 | 153.88 |
| Lane Group LOS | E | F | B | F | B | B | D | D | D | D | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.23 | 51.08 | 3.36 | 8.65 | 14.75 | 0.78 | 2.06 | 1.67 | 8.16 | 0.53 | 25.41 |
| 50th-Percentile Queue Length [ft/ln] | 30.82 | 1276.96 | 83.92 | 216.16 | 368.78 | 19.53 | 51.60 | 41.81 | 204.04 | 13.19 | 635.14 |
| 95th-Percentile Queue Length [veh/ln] | 2.22 | 71.27 | 6.04 | 14.22 | 21.05 | 1.41 | 3.72 | 3.01 | 12.85 | 0.95 | 36.93 |
| 95th-Percentile Queue Length [ft/ln] | 55.47 | 1781.85 | 151.06 | 355.41 | 526.24 | 35.16 | 92.88 | 75.26 | 321.18 | 23.74 | 923.36 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 66.02 | 113.70 | 15.18 | 145.29 | 19.40 | 10.22 | 39.54 | 39.10 | 39.10 | 48.02 | 38.10 | 153.88 |
| Movement LOS | E | F | B | F | B | B | D | D | D | D | D | F |
| d_A, Approach Delay [s/veh] | 104.25 | | | 31.08 | | | 39.34 | | | 114.08 | | |
| Approach LOS | F | | | C | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 78.75 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 1.065 | | | | | | | | | | | |

**Emissions**

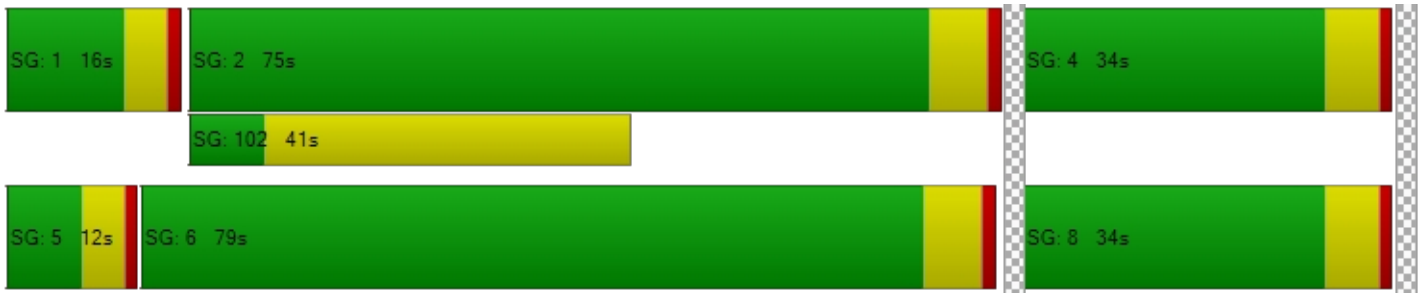
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.01 | 194.40 | 19.34 | 4.37 | 39.54 | 1.80 | 3.57 | 2.92 | 17.29 | 1.36 | 31.29 |
| Stops [stops/h] | 35.50 | 2942.12 | 96.68 | 249.02 | 849.66 | 22.50 | 59.45 | 48.17 | 235.06 | 15.20 | 731.68 |
| Fuel consumption [US gal/h] | 1.40 | 128.43 | 3.55 | 11.12 | 26.74 | 0.72 | 1.38 | 1.12 | 5.65 | 0.37 | 24.12 |
| CO [g/h] | 97.73 | 8977.02 | 248.26 | 777.48 | 1869.36 | 50.11 | 96.43 | 78.21 | 395.23 | 25.77 | 1685.96 |
| NOx [g/h] | 19.01 | 1746.60 | 48.30 | 151.27 | 363.71 | 9.75 | 18.76 | 15.22 | 76.90 | 5.01 | 328.03 |
| VOC [g/h] | 22.65 | 2080.51 | 57.54 | 180.19 | 433.24 | 11.61 | 22.35 | 18.13 | 91.60 | 5.97 | 390.74 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 51.98 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 2.550 |
| Crosswalk LOS | F | F | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1096 | 1160 | 448 | 448 |
| d_b, Bicycle Delay [s] | 12.77 | 11.03 | 37.64 | 37.64 |
| l_b,int, Bicycle LOS Score for Intersection | 3.816 | 3.156 | 1.809 | 2.890 |
| Bicycle LOS | D | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 86.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.019 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 393 | 26 | 101 | 394 | 23 | 145 | 87 | 21 | 67 | 29 | 121 |
| Total Analysis Volume [veh/h] | 44 | 1573 | 102 | 403 | 1578 | 94 | 581 | 346 | 83 | 266 | 117 | 482 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 105 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 4 | 8 | 8 | 8 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 50 | 20 | 50 | 50 | 40 | 40 | 40 | 40 | 40 | 40 |
| Amber [s] | 3.7 | 5.5 | 5.5 | 3.7 | 5.5 | 5.5 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All red [s] | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 7 | 0 | 7 | 7 | 0 | 0 | 0 | 7 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 24 | 24 | 0 | 24 | 24 | 0 | 0 | 0 | 34 | 34 | 34 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 5.5 | 2.7 | 5.5 | 5.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 39 | 39 | 20 | 49 | 49 | 46 | 46 | 46 | 46 | 46 | 46 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lag | - | - | Lag | - | - |
| Minimum Green [s] | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Vehicle Extension [s] | 2.5 | 5.0 | 5.0 | 2.5 | 5.0 | 5.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 44 | 44 | 15 | 55 | 55 | 29 | 29 | 29 | 29 | 29 |
| g / C, Green / Cycle | 0.03 | 0.42 | 0.42 | 0.15 | 0.53 | 0.53 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.41 | 0.05 | 0.22 | 0.42 | 0.05 | 0.32 | 0.23 | 0.15 | 0.06 | 0.25 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 1800 | 1900 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 62 | 1582 | 791 | 262 | 2005 | 1003 | 447 | 521 | 153 | 521 | 521 |
| d1, Uniform Delay [s] | 50.17 | 30.51 | 18.90 | 44.85 | 20.03 | 12.32 | 36.79 | 35.73 | 30.23 | 29.48 | 37.07 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.29 | 0.08 | 0.04 | 0.04 | 0.14 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 10.55 | 21.29 | 0.34 | 259.69 | 3.21 | 0.19 | 144.96 | 2.38 | 334.55 | 0.08 | 9.22 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.71 | 0.99 | 0.13 | 1.54 | 0.79 | 0.09 | 1.30 | 0.82 | 1.74 | 0.22 | 0.93 |
| d, Delay for Lane Group [s/veh] | 60.73 | 51.81 | 19.23 | 304.54 | 23.24 | 12.51 | 181.75 | 38.11 | 364.78 | 29.56 | 46.29 |
| Lane Group LOS | E | D | B | F | C | B | F | D | F | C | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.32 | 23.64 | 1.60 | 25.68 | 15.58 | 1.13 | 28.84 | 10.48 | 17.28 | 2.29 | 13.15 |
| 50th-Percentile Queue Length [ft/ln] | 33.04 | 591.00 | 39.92 | 642.12 | 389.44 | 28.20 | 721.10 | 262.07 | 431.96 | 57.32 | 328.80 |
| 95th-Percentile Queue Length [veh/ln] | 2.38 | 31.61 | 2.87 | 40.04 | 22.05 | 2.03 | 43.40 | 15.79 | 29.97 | 4.13 | 19.10 |
| 95th-Percentile Queue Length [ft/ln] | 59.48 | 790.34 | 71.86 | 1001.10 | 551.26 | 50.75 | 1085.07 | 394.82 | 749.25 | 103.18 | 477.49 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 60.73 | 51.81 | 19.23 | 304.54 | 23.24 | 12.51 | 181.75 | 38.11 | 38.11 | 364.78 | 29.56 | 46.29 |
| Movement LOS | E | D | B | F | C | B | F | D | D | F | C | D |
| d_A, Approach Delay [s/veh] | 50.10 | | | 77.39 | | | 120.73 | | | 141.97 | | |
| Approach LOS | D | | | E | | | F | | | F | | |
| d_I, Intersection Delay [s/veh] | 86.69 | | | | | | | | | | | |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.019 | | | | | | | | | | | |

**Emissions**

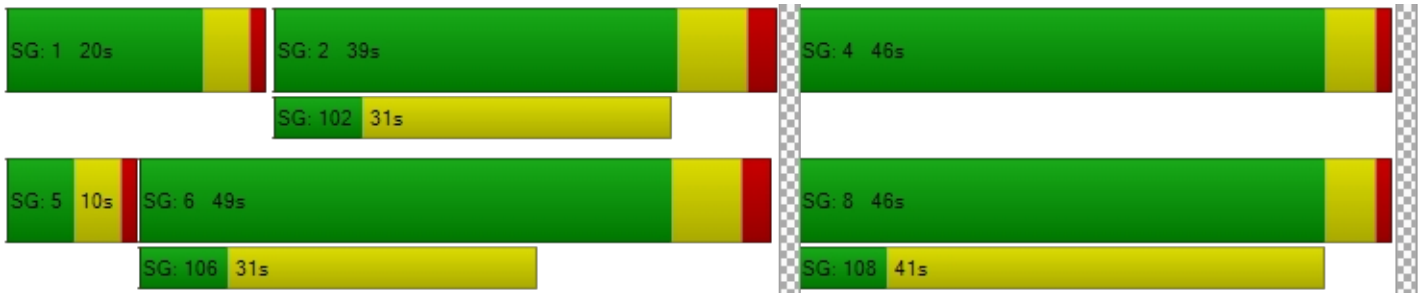
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.30 | 82.17 | 5.33 | 26.49 | 103.72 | 6.18 | 32.10 | 23.70 | 9.37 | 4.12 | 16.98 |
| Stops [stops/h] | 45.32 | 1621.02 | 54.75 | 880.63 | 1068.17 | 38.67 | 988.93 | 359.42 | 592.40 | 78.62 | 450.93 |
| Fuel consumption [US gal/h] | 0.89 | 28.92 | 0.92 | 30.93 | 17.63 | 0.71 | 28.27 | 6.29 | 23.40 | 1.31 | 7.73 |
| CO [g/h] | 62.12 | 2021.63 | 64.38 | 2161.74 | 1232.66 | 49.44 | 1976.04 | 439.54 | 1635.68 | 91.41 | 540.36 |
| NOx [g/h] | 12.09 | 393.33 | 12.53 | 420.60 | 239.83 | 9.62 | 384.47 | 85.52 | 318.24 | 17.79 | 105.14 |
| VOC [g/h] | 14.40 | 468.53 | 14.92 | 501.00 | 285.68 | 11.46 | 457.97 | 101.87 | 379.08 | 21.19 | 125.23 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 42.08 | 42.08 | 42.08 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 4.052 | 2.359 | 2.557 |
| Crosswalk LOS | F | D | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 600 | 790 | 781 | 781 |
| d_b, Bicycle Delay [s] | 25.73 | 19.20 | 19.50 | 19.50 |
| l_b,int, Bicycle LOS Score for Intersection | 2.978 | 3.271 | 3.226 | 2.987 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 30.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.325 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 64 | 511 | 0 | 835 | 299 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 64 | 511 | 0 | 835 | 299 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 134 | 0 | 220 | 79 | 0 |
| Total Analysis Volume [veh/h] | 67 | 538 | 0 | 879 | 315 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.32 | 0.74 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 30.64 | 22.79 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | D | C | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 1.34 | 6.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 33.52 | 167.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 23.66 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 7.96 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: I-15 Southbound On-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.676 |

**Intersection Setup**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound On-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 795 | 103 | 299 | 7 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 795 | 103 | 299 | 7 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 209 | 27 | 79 | 2 |
| Total Analysis Volume [veh/h] | 0 | 0 | 837 | 108 | 315 | 7 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | | | | |
|---|---|---|---|---|---|---|
| Priority Scheme | Stop | | Free | | Free | |
| Flared Lane | | | | | | |
| Storage Area [veh] | 0 | | 0 | | 0 | |
| Two-Stage Gap Acceptance | | | | | | |
| Number of Storage Spaces in Median | 0 | | 0 | | 0 | |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.68 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 12.59 | 0.00 | 0.00 | 0.00 |
| Movement LOS | | | B | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 4.87 | 4.87 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 121.74 | 121.74 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 0.00 | | 11.15 | | 0.00 | |
| Approach LOS | A | | B | | A | |
| d_I, Intersection Delay [s/veh] | 8.31 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Project Access Driveway 1 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.027 |

**Intersection Setup**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 1 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 5 | 632 | 1 | 2 | 713 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 5 | 632 | 1 | 2 | 713 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 1 | 166 | 0 | 1 | 188 |
| Total Analysis Volume [veh/h] | 4 | 5 | 665 | 1 | 2 | 751 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 29.63 | 13.42 | 0.00 | 0.00 | 8.90 | 0.00 |
| Movement LOS | D | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.92 | 2.92 | 0.00 | 0.00 | 0.08 | 0.08 |
| d_A, Approach Delay [s/veh] | 20.62 | | 0.00 | | 0.02 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.14 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Project Access Driveway 2 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.020 |

**Intersection Setup**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 2 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 635 | 3 | 0 | 711 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 635 | 3 | 0 | 711 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 167 | 1 | 0 | 187 |
| Total Analysis Volume [veh/h] | 3 | 0 | 668 | 3 | 0 | 748 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| d_M, Delay for Movement [s/veh] | 29.34 | 13.36 | 0.00 | 0.00 | 8.92 | 0.00 |
| Movement LOS | D | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.52 | 1.52 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 29.34 | | 0.00 | | 0.00 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: Project Access Driveway 3 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.020 |

**Intersection Setup**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 3 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 632 | 3 | 0 | 708 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 632 | 3 | 0 | 708 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 166 | 1 | 0 | 186 |
| Total Analysis Volume [veh/h] | 3 | 0 | 665 | 3 | 0 | 745 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 29.13 | 13.32 | 0.00 | 0.00 | 8.91 | 0.00 |
| Movement LOS | D | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 1.50 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 29.13 | | 0.00 | | 0.00 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.06 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Project Access Driveway 4 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.026 |

**Intersection Setup**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Project Access Driveway 4 | | Poplar Street | | Poplar Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 5 | 630 | 1 | 2 | 705 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 5 | 630 | 1 | 2 | 705 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 1 | 166 | 0 | 1 | 186 |
| Total Analysis Volume [veh/h] | 4 | 5 | 663 | 1 | 2 | 742 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 2 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 29.25 | 13.38 | 0.00 | 0.00 | 8.89 | 0.00 |
| Movement LOS | D | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.88 | 2.88 | 0.00 | 0.00 | 0.08 | 0.08 |
| d_A, Approach Delay [s/veh] | 20.43 | | 0.00 | | 0.02 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.14 | | | | | |
| Intersection LOS | D | | | | | |

# Appendix H

Project Opening Year (2026)

With Project Conditions

With Intersection Improvements

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 40.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.788 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 209 | 1008 | 11 | 397 | 1263 | 44 | 65 | 908 | 214 | 12 | 1178 | 565 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 209 | 1008 | 11 | 397 | 1263 | 44 | 65 | 908 | 214 | 12 | 1178 | 565 |
| Peak Hour Factor | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 | 0.9650 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 261 | 3 | 103 | 327 | 11 | 17 | 235 | 55 | 3 | 305 | 146 |
| Total Analysis Volume [veh/h] | 217 | 1045 | 11 | 411 | 1309 | 46 | 67 | 941 | 222 | 12 | 1221 | 585 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 19 | 0 | 6 | 19 | 0 | 10 | 9 | 0 | 10 | 9 | 9 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 15 | 45 | 0 | 30 | 60 | 0 | 11 | 45 | 0 | 10 | 44 | 44 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | No |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | No |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 11 | 47 | 47 | 26 | 62 | 62 | 6 | 39 | 39 | 2 | 35 | 65 |
| g / C, Green / Cycle | 0.08 | 0.36 | 0.36 | 0.20 | 0.48 | 0.48 | 0.05 | 0.30 | 0.30 | 0.02 | 0.27 | 0.50 |
| (v / s)_i Volume / Saturation Flow Rate | 0.07 | 0.19 | 0.20 | 0.13 | 0.38 | 0.38 | 0.04 | 0.22 | 0.21 | 0.01 | 0.23 | 0.33 |
| s, saturation flow rate [veh/h] | 3200 | 3600 | 1800 | 3200 | 1800 | 1800 | 1700 | 3600 | 1800 | 1700 | 5400 | 1800 |
| c, Capacity [veh/h] | 263 | 1293 | 646 | 640 | 858 | 858 | 84 | 1083 | 541 | 29 | 1448 | 898 |
| d1, Uniform Delay [s] | 58.72 | 33.08 | 33.44 | 47.73 | 28.58 | 28.51 | 61.11 | 40.68 | 40.16 | 63.23 | 44.98 | 24.17 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.17 | 0.11 | 0.11 | 0.49 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 6.39 | 1.60 | 3.49 | 1.08 | 7.37 | 7.25 | 15.23 | 0.95 | 2.54 | 9.00 | 1.41 | 3.62 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.82 | 0.54 | 0.56 | 0.64 | 0.79 | 0.79 | 0.79 | 0.73 | 0.69 | 0.41 | 0.84 | 0.65 |
| d, Delay for Lane Group [s/veh] | 65.11 | 34.68 | 36.93 | 48.81 | 35.94 | 35.75 | 76.34 | 41.64 | 42.70 | 72.24 | 46.39 | 27.79 |
| Lane Group LOS | E | C | D | D | D | D | E | D | D | E | D | C |
| Critical Lane Group | Yes | No | No | No | Yes | No | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.60 | 8.40 | 9.20 | 5.91 | 17.71 | 17.58 | 2.47 | 10.84 | 10.45 | 0.45 | 11.98 | 13.10 |
| 50th-Percentile Queue Length [ft/ln] | 89.91 | 210.04 | 229.94 | 147.65 | 442.76 | 439.47 | 61.76 | 271.01 | 261.22 | 11.34 | 299.39 | 327.59 |
| 95th-Percentile Queue Length [veh/ln] | 6.47 | 13.15 | 14.17 | 9.89 | 24.61 | 24.45 | 4.45 | 16.24 | 15.75 | 0.82 | 17.65 | 19.04 |
| 95th-Percentile Queue Length [ft/ln] | 161.84 | 328.87 | 354.28 | 247.29 | 615.31 | 611.37 | 111.17 | 406.00 | 393.76 | 20.41 | 441.27 | 476.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 65.11 | 35.44 | 36.93 | 48.81 | 35.85 | 35.75 | 76.34 | 41.81 | 42.70 | 72.24 | 46.39 | 27.79 |
| Movement LOS | E | D | D | D | D | D | E | D | D | E | D | C |
| d_A, Approach Delay [s/veh] | 40.51 | | | 38.87 | | | 43.85 | | | 40.57 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 40.73 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.788 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 44.39 | 23.19 | 23.65 | 39.07 | 38.91 | 6.26 | 73.62 | 35.09 | 0.77 | 77.85 | 37.30 |
| Stops [stops/h] | 199.18 | 465.31 | 254.70 | 327.10 | 490.44 | 486.79 | 68.41 | 600.39 | 289.36 | 12.56 | 994.88 | 362.87 |
| Fuel consumption [US gal/h] | 7.75 | 16.70 | 9.15 | 12.12 | 17.14 | 17.01 | 2.52 | 20.29 | 9.81 | 0.44 | 32.61 | 11.30 |
| CO [g/h] | 541.90 | 1167.15 | 639.31 | 847.27 | 1198.21 | 1188.95 | 176.22 | 1418.06 | 685.75 | 30.42 | 2279.36 | 789.59 |
| NOx [g/h] | 105.43 | 227.08 | 124.39 | 164.85 | 233.13 | 231.33 | 34.29 | 275.90 | 133.42 | 5.92 | 443.48 | 153.63 |
| VOC [g/h] | 125.59 | 270.50 | 148.17 | 196.36 | 277.70 | 275.55 | 40.84 | 328.65 | 158.93 | 7.05 | 528.26 | 183.00 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 631 | 862 | 631 | 615 |
| d_b, Bicycle Delay [s] | 30.47 | 21.06 | 30.47 | 31.15 |
| l_b,int, Bicycle LOS Score for Intersection | 2.260 | 3.017 | 2.236 | 2.560 |
| Bicycle LOS | B | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 35.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.778 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1194 | 556 | 116 | 1133 | 29 | 5 | 0 | 29 | 125 | 0 | 26 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1194 | 556 | 116 | 1133 | 29 | 5 | 0 | 29 | 125 | 0 | 26 |
| Peak Hour Factor | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 | 0.8880 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 336 | 157 | 33 | 319 | 8 | 1 | 0 | 8 | 35 | 0 | 7 |
| Total Analysis Volume [veh/h] | 80 | 1345 | 626 | 131 | 1276 | 33 | 6 | 0 | 33 | 141 | 0 | 29 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 120 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 8 | 9 | 0 | 8 | 9 | 0 | 8 | 18 | 0 | 9 | 19 | 0 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 28 | 81 | 0 | 14 | 67 | 0 | 15 | 10 | 0 | 15 | 10 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 7 | 69 | 69 | 10 | 72 | 72 | 1 | 14 | 11 | 24 | 24 |
| g / C, Green / Cycle | 0.06 | 0.58 | 0.58 | 0.08 | 0.60 | 0.60 | 0.01 | 0.11 | 0.09 | 0.20 | 0.20 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.55 | 0.55 | 0.08 | 0.36 | 0.36 | 0.00 | 0.02 | 0.08 | 0.00 | 0.02 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 103 | 1039 | 1039 | 142 | 1080 | 1080 | 17 | 206 | 156 | 353 | 353 |
| d1, Uniform Delay [s] | 55.59 | 23.70 | 23.70 | 54.63 | 15.10 | 15.04 | 59.05 | 47.93 | 53.98 | 0.00 | 39.38 |
| k, delay calibration | 0.11 | 0.37 | 0.37 | 0.32 | 0.14 | 0.13 | 0.11 | 0.50 | 0.32 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 11.97 | 14.46 | 14.46 | 43.66 | 0.70 | 0.68 | 12.88 | 1.66 | 37.18 | 0.00 | 0.45 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.78 | 0.95 | 0.95 | 0.92 | 0.61 | 0.60 | 0.36 | 0.16 | 0.90 | 0.00 | 0.08 |
| d, Delay for Lane Group [s/veh] | 67.56 | 38.16 | 38.16 | 98.29 | 15.80 | 15.72 | 71.93 | 49.59 | 91.16 | 0.00 | 39.84 |
| Lane Group LOS | E | D | D | F | B | B | E | D | F | A | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 2.61 | 25.61 | 25.61 | 5.45 | 9.58 | 9.47 | 0.24 | 0.99 | 5.75 | 0.00 | 0.74 |
| 50th-Percentile Queue Length [ft/ln] | 65.37 | 640.25 | 640.25 | 136.30 | 239.56 | 236.85 | 6.01 | 24.76 | 143.79 | 0.00 | 18.39 |
| 95th-Percentile Queue Length [veh/ln] | 4.71 | 33.91 | 33.91 | 9.28 | 14.66 | 14.52 | 0.43 | 1.78 | 9.68 | 0.00 | 1.32 |
| 95th-Percentile Queue Length [ft/ln] | 117.67 | 847.74 | 847.74 | 232.03 | 366.47 | 363.05 | 10.82 | 44.57 | 242.11 | 0.00 | 33.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 67.56 | 38.16 | 38.16 | 98.29 | 15.76 | 15.72 | 71.93 | 49.59 | 49.59 | 91.16 | 0.00 | 39.84 |
| Movement LOS | E | D | D | F | B | B | E | D | D | F | A | D |
| d_A, Approach Delay [s/veh] | 39.30 | | | 23.27 | | | 53.03 | | | 82.40 | | |
| Approach LOS | D | | | C | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 35.19 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.778 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.66 | 32.71 | 32.71 | 10.81 | 54.20 | 53.83 | 0.14 | 0.78 | 5.47 | 0.00 | 1.12 |
| Stops [stops/h] | 78.45 | 768.30 | 768.30 | 163.56 | 287.47 | 284.22 | 7.22 | 29.71 | 172.54 | 0.00 | 22.06 |
| Fuel consumption [US gal/h] | 2.92 | 25.75 | 25.75 | 6.60 | 10.32 | 10.21 | 0.13 | 0.53 | 4.51 | 0.00 | 0.49 |
| CO [g/h] | 204.43 | 1800.16 | 1800.16 | 461.67 | 721.26 | 713.56 | 9.33 | 37.00 | 314.97 | 0.00 | 34.40 |
| NOx [g/h] | 39.77 | 350.25 | 350.25 | 89.82 | 140.33 | 138.83 | 1.82 | 7.20 | 61.28 | 0.00 | 6.69 |
| VOC [g/h] | 47.38 | 417.21 | 417.21 | 107.00 | 167.16 | 165.37 | 2.16 | 8.58 | 73.00 | 0.00 | 7.97 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1283 | 1050 | 100 | 100 |
| d_b, Bicycle Delay [s] | 7.70 | 13.54 | 54.15 | 54.15 |
| l_b,int, Bicycle LOS Score for Intersection | 3.252 | 2.748 | 1.624 | 1.840 |
| Bicycle LOS | C | B | A | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 28.4 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.942 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 20 | 0 | 46 | 0 | 0 | 41 | 156 | 428 | 40 | 133 | 194 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 20 | 0 | 46 | 0 | 0 | 41 | 156 | 428 | 40 | 133 | 194 | 0 |
| Peak Hour Factor | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 | 0.7500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 0 | 15 | 0 | 0 | 14 | 52 | 143 | 13 | 44 | 65 | 0 |
| Total Analysis Volume [veh/h] | 27 | 0 | 61 | 0 | 0 | 55 | 208 | 571 | 53 | 177 | 259 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

**Lanes**

| | | | | | |
|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | 557 | 568 | 600 | 662 | 656 |
| Degree of Utilization, x | 0.16 | 0.10 | 0.35 | 0.94 | 0.66 |

**Movement, Approach, & Intersection Results**

| | | | | | |
|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | 0.56 | 0.32 | 1.54 | 13.08 | 5.03 |
| 95th-Percentile Queue Length [ft] | 13.94 | 8.01 | 38.58 | 327.12 | 125.77 |
| Approach Delay [s/veh] | 10.67 | 10.02 | 36.59 | | 18.69 |
| Approach LOS | B | B | E | | C |
| Intersection Delay [s/veh] | 28.41 | | | | |
| Intersection LOS | D | | | | |

**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 54.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.926 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 385 | 11 | 63 | 375 | 46 | 15 | 19 | 5 | 28 | 59 | 138 |
| Total Analysis Volume [veh/h] | 40 | 1541 | 45 | 251 | 1498 | 183 | 62 | 77 | 18 | 111 | 236 | 553 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 12 | 61 | 0 | 23 | 72 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 54 | 54 | 18 | 68 | 68 | 41 | 41 | 41 | 41 | 41 |
| g / C, Green / Cycle | 0.03 | 0.41 | 0.41 | 0.14 | 0.52 | 0.52 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.43 | 0.03 | 0.15 | 0.42 | 0.10 | 0.04 | 0.05 | 0.07 | 0.13 | 0.31 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 52 | 1482 | 741 | 239 | 1879 | 939 | 390 | 568 | 501 | 568 | 568 |
| d1, Uniform Delay [s] | 62.58 | 38.25 | 23.09 | 55.85 | 25.45 | 16.54 | 31.62 | 32.16 | 32.59 | 35.06 | 43.98 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.37 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.42 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 16.42 | 34.53 | 0.16 | 63.44 | 3.62 | 0.46 | 0.07 | 0.05 | 0.08 | 0.18 | 28.64 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 1.04 | 0.06 | 1.05 | 0.80 | 0.19 | 0.16 | 0.17 | 0.22 | 0.42 | 0.97 |
| d, Delay for Lane Group [s/veh] | 79.00 | 72.78 | 23.24 | 119.29 | 29.07 | 17.00 | 31.69 | 32.21 | 32.68 | 35.24 | 72.62 |
| Lane Group LOS | E | F | C | F | C | B | C | C | C | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.55 | 30.22 | 0.88 | 12.06 | 19.38 | 3.05 | 1.41 | 2.20 | 2.60 | 5.96 | 21.95 |
| 50th-Percentile Queue Length [ft/ln] | 38.81 | 755.61 | 22.00 | 301.38 | 484.38 | 76.19 | 35.32 | 54.96 | 65.12 | 149.00 | 548.71 |
| 95th-Percentile Queue Length [veh/ln] | 2.79 | 40.42 | 1.58 | 18.15 | 26.59 | 5.49 | 2.54 | 3.96 | 4.69 | 9.96 | 29.63 |
| 95th-Percentile Queue Length [ft/ln] | 69.87 | 1010.39 | 39.60 | 453.66 | 664.85 | 137.14 | 63.58 | 98.92 | 117.21 | 249.09 | 740.79 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 79.00 | 72.78 | 23.24 | 119.29 | 29.07 | 17.00 | 31.69 | 32.21 | 32.21 | 32.68 | 35.24 | 72.62 |
| Movement LOS | E | F | C | F | C | B | C | C | C | C | D | E |
| d_A, Approach Delay [s/veh] | 71.56 | | | 39.65 | | | 32.01 | | | 57.89 | | |
| Approach LOS | E | | | D | | | C | | | E | | |
| d_I, Intersection Delay [s/veh] | 54.19 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.926 | | | | | | | | | | | |

**Emissions**

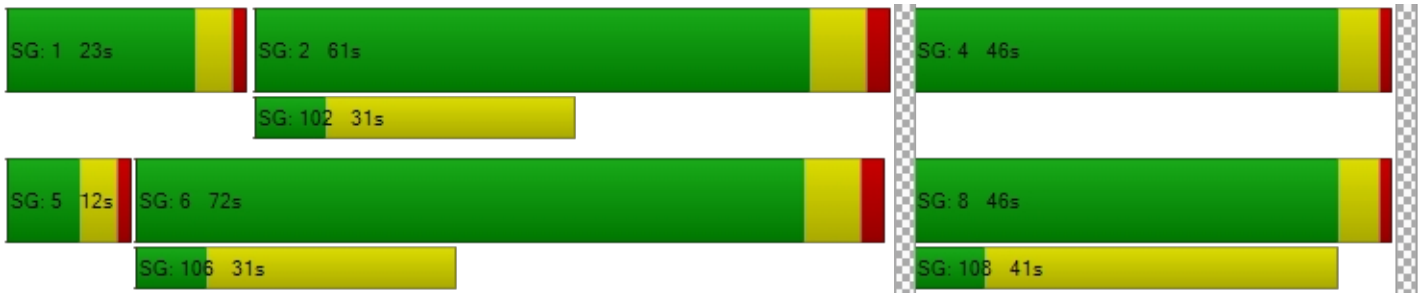
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.09 | 80.50 | 2.35 | 16.50 | 98.46 | 12.03 | 3.43 | 5.25 | 3.91 | 8.31 | 19.48 |
| Stops [stops/h] | 42.99 | 1673.97 | 24.37 | 333.84 | 1073.09 | 84.39 | 39.12 | 60.88 | 72.13 | 165.05 | 607.80 |
| Fuel consumption [US gal/h] | 0.97 | 35.38 | 0.44 | 8.62 | 18.84 | 1.59 | 0.76 | 1.18 | 1.30 | 2.95 | 12.33 |
| CO [g/h] | 67.56 | 2473.25 | 31.05 | 602.22 | 1317.18 | 111.46 | 52.91 | 82.14 | 90.70 | 205.97 | 861.94 |
| NOx [g/h] | 13.14 | 481.20 | 6.04 | 117.17 | 256.28 | 21.69 | 10.29 | 15.98 | 17.65 | 40.07 | 167.70 |
| VOC [g/h] | 15.66 | 573.20 | 7.20 | 139.57 | 305.27 | 25.83 | 12.26 | 19.04 | 21.02 | 47.73 | 199.76 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.223 | 2.158 | 2.459 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 823 | 992 | 631 | 631 |
| d_b, Bicycle Delay [s] | 22.51 | 16.50 | 30.47 | 30.47 |
| l_b,int, Bicycle LOS Score for Intersection | 2.901 | 3.154 | 1.819 | 3.045 |
| Bicycle LOS | C | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 13.3 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.036 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 12 | 644 | 0 | 314 | 167 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 0.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 12 | 0 | 0 | 314 | 167 | 0 |
| Peak Hour Factor | 0.7700 | 0.7700 | 0.9500 | 0.7700 | 0.7700 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 0 | 0 | 102 | 54 | 0 |
| Total Analysis Volume [veh/h] | 16 | 0 | 0 | 408 | 217 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 13.32 | 9.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 13.32 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.33 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 48.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.856 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 276 | 1440 | 37 | 627 | 1100 | 64 | 63 | 1318 | 192 | 14 | 967 | 448 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 276 | 1440 | 37 | 627 | 1100 | 64 | 63 | 1318 | 192 | 14 | 967 | 448 |
| Peak Hour Factor | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 | 0.9530 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 72 | 378 | 10 | 164 | 289 | 17 | 17 | 346 | 50 | 4 | 254 | 118 |
| Total Analysis Volume [veh/h] | 290 | 1511 | 39 | 658 | 1154 | 67 | 66 | 1383 | 201 | 15 | 1015 | 470 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 19 | 0 | 6 | 19 | 0 | 10 | 9 | 0 | 10 | 9 | 9 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 17 | 43 | 0 | 34 | 60 | 0 | 23 | 43 | 0 | 10 | 30 | 30 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | No |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | No |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 13 | 42 | 42 | 29 | 58 | 58 | 6 | 41 | 41 | 3 | 37 | 70 |
| g / C, Green / Cycle | 0.10 | 0.32 | 0.32 | 0.22 | 0.44 | 0.44 | 0.05 | 0.32 | 0.32 | 0.02 | 0.28 | 0.54 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.28 | 0.29 | 0.21 | 0.34 | 0.34 | 0.04 | 0.29 | 0.29 | 0.01 | 0.19 | 0.26 |
| s, saturation flow rate [veh/h] | 3200 | 3600 | 1800 | 3200 | 1800 | 1800 | 1700 | 3600 | 1800 | 1700 | 5400 | 1800 |
| c, Capacity [veh/h] | 320 | 1151 | 576 | 713 | 797 | 797 | 85 | 1133 | 567 | 33 | 1536 | 969 |
| d1, Uniform Delay [s] | 57.90 | 41.98 | 42.62 | 49.42 | 30.58 | 30.54 | 61.05 | 43.27 | 43.00 | 63.04 | 40.98 | 18.77 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.38 | 0.11 | 0.11 | 0.37 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.58 | 10.19 | 22.25 | 5.60 | 6.98 | 6.92 | 14.11 | 4.39 | 18.74 | 9.33 | 0.49 | 1.30 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.91 | 0.89 | 0.92 | 0.92 | 0.77 | 0.77 | 0.78 | 0.94 | 0.92 | 0.45 | 0.66 | 0.49 |
| d, Delay for Lane Group [s/veh] | 67.47 | 52.17 | 64.87 | 55.02 | 37.57 | 37.46 | 75.15 | 47.66 | 61.73 | 72.37 | 41.48 | 20.07 |
| Lane Group LOS | E | D | E | E | D | D | E | D | E | E | D | C |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 4.93 | 16.10 | 18.80 | 10.42 | 16.25 | 16.17 | 2.41 | 16.28 | 18.20 | 0.56 | 9.15 | 8.39 |
| 50th-Percentile Queue Length [ft/ln] | 123.25 | 402.44 | 470.06 | 260.45 | 406.18 | 404.37 | 60.32 | 407.02 | 455.09 | 14.02 | 228.87 | 209.87 |
| 95th-Percentile Queue Length [veh/ln] | 8.57 | 22.68 | 25.91 | 15.71 | 22.86 | 22.77 | 4.34 | 22.90 | 25.20 | 1.01 | 14.12 | 13.15 |
| 95th-Percentile Queue Length [ft/ln] | 214.29 | 566.94 | 647.84 | 392.79 | 571.44 | 569.27 | 108.58 | 572.45 | 630.02 | 25.24 | 352.92 | 328.66 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 67.47 | 56.29 | 64.87 | 55.02 | 37.51 | 37.46 | 75.15 | 50.93 | 61.73 | 72.37 | 41.48 | 20.07 |
| Movement LOS | E | E | E | E | D | D | E | D | E | E | D | C |
| d_A, Approach Delay [s/veh] | 58.24 | | | 43.64 | | | 53.22 | | | 35.08 | | |
| Approach LOS | E | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 47.98 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.856 | | | | | | | | | | | |

**Emissions**

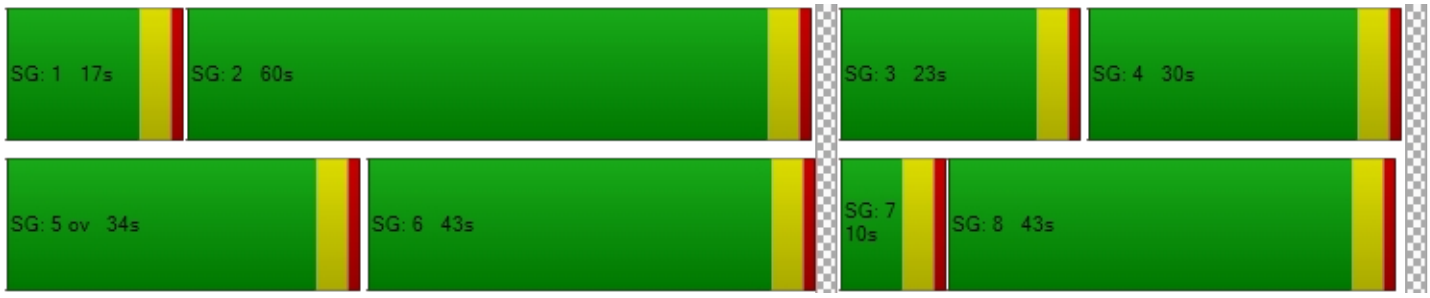
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 18.56 | 65.31 | 33.89 | 37.86 | 35.18 | 35.09 | 6.17 | 99.21 | 48.85 | 0.96 | 64.71 | 29.97 |
| Stops [stops/h] | 273.06 | 891.56 | 520.68 | 577.00 | 449.92 | 447.92 | 66.82 | 901.70 | 504.10 | 15.53 | 760.55 | 232.47 |
| Fuel consumption [US gal/h] | 10.65 | 32.77 | 19.66 | 21.42 | 15.82 | 15.75 | 2.46 | 30.36 | 17.56 | 0.54 | 24.86 | 7.24 |
| CO [g/h] | 744.55 | 2290.84 | 1374.09 | 1496.92 | 1105.86 | 1100.76 | 171.72 | 2122.27 | 1227.59 | 37.84 | 1737.56 | 506.10 |
| NOx [g/h] | 144.86 | 445.71 | 267.35 | 291.25 | 215.16 | 214.17 | 33.41 | 412.92 | 238.84 | 7.36 | 338.07 | 98.47 |
| VOC [g/h] | 172.56 | 530.92 | 318.46 | 346.93 | 256.29 | 255.11 | 39.80 | 491.86 | 284.51 | 8.77 | 402.70 | 117.29 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 600 | 862 | 600 | 400 |
| d_b, Bicycle Delay [s] | 31.85 | 21.06 | 31.85 | 41.60 |
| l_b,int, Bicycle LOS Score for Intersection | 2.572 | 3.110 | 2.467 | 2.385 |
| Bicycle LOS | B | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 49.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.891 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1632 | 158 | 44 | 1248 | 15 | 25 | 0 | 56 | 444 | 0 | 96 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1632 | 158 | 44 | 1248 | 15 | 25 | 0 | 56 | 444 | 0 | 96 |
| Peak Hour Factor | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 | 0.9760 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 418 | 40 | 11 | 320 | 4 | 6 | 0 | 14 | 114 | 0 | 25 |
| Total Analysis Volume [veh/h] | 38 | 1672 | 162 | 45 | 1279 | 15 | 26 | 0 | 57 | 455 | 0 | 98 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 8 | 9 | 0 | 8 | 9 | 0 | 8 | 18 | 0 | 9 | 19 | 0 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 70 | 0 | 10 | 70 | 0 | 40 | 10 | 0 | 40 | 10 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 4 | 67 | 67 | 5 | 67 | 67 | 4 | 6 | 36 | 38 | 38 |
| g / C, Green / Cycle | 0.03 | 0.52 | 0.52 | 0.04 | 0.52 | 0.52 | 0.03 | 0.05 | 0.28 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.51 | 0.51 | 0.03 | 0.36 | 0.36 | 0.02 | 0.03 | 0.27 | 0.00 | 0.05 |
| s, saturation flow rate [veh/h] | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 59 | 930 | 930 | 63 | 934 | 934 | 49 | 84 | 471 | 530 | 530 |
| d1, Uniform Delay [s] | 61.98 | 31.05 | 30.91 | 61.90 | 23.49 | 23.45 | 62.23 | 61.04 | 46.40 | 0.00 | 34.24 |
| k, delay calibration | 0.11 | 0.47 | 0.46 | 0.11 | 0.24 | 0.24 | 0.11 | 0.50 | 0.43 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 11.39 | 25.97 | 24.90 | 13.86 | 2.10 | 2.06 | 8.40 | 36.74 | 31.19 | 0.00 | 0.77 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.65 | 0.99 | 0.98 | 0.71 | 0.69 | 0.69 | 0.53 | 0.68 | 0.97 | 0.00 | 0.19 |
| d, Delay for Lane Group [s/veh] | 73.37 | 57.02 | 55.81 | 75.77 | 25.59 | 25.51 | 70.63 | 97.77 | 77.60 | 0.00 | 35.01 |
| Lane Group LOS | E | E | E | E | C | C | E | F | E | A | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.38 | 31.51 | 31.00 | 1.65 | 13.83 | 13.74 | 0.97 | 2.71 | 18.23 | 0.00 | 2.41 |
| 50th-Percentile Queue Length [ft/ln] | 34.39 | 787.72 | 775.08 | 41.34 | 345.63 | 343.57 | 24.13 | 67.76 | 455.69 | 0.00 | 60.18 |
| 95th-Percentile Queue Length [veh/ln] | 2.48 | 40.71 | 40.13 | 2.98 | 19.92 | 19.82 | 1.74 | 4.88 | 25.23 | 0.00 | 4.33 |
| 95th-Percentile Queue Length [ft/ln] | 61.90 | 1017.87 | 1003.37 | 74.42 | 498.08 | 495.56 | 43.44 | 121.97 | 630.73 | 0.00 | 108.33 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 73.37 | 56.48 | 55.81 | 75.77 | 25.55 | 25.51 | 70.63 | 97.77 | 97.77 | 77.60 | 0.00 | 35.01 |
| Movement LOS | E | E | E | E | C | C | E | F | F | E | A | D |
| d_A, Approach Delay [s/veh] | 56.76 | | | 27.24 | | | 89.27 | | | 70.05 | | |
| Approach LOS | E | | | C | | | F | | | E | | |
| d_I, Intersection Delay [s/veh] | 49.10 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.891 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.26 | 30.51 | 30.37 | 3.71 | 53.49 | 53.30 | 0.62 | 1.35 | 17.64 | 0.00 | 3.80 |
| Stops [stops/h] | 38.09 | 872.56 | 858.55 | 45.80 | 382.86 | 380.57 | 26.73 | 75.06 | 504.76 | 0.00 | 66.66 |
| Fuel consumption [US gal/h] | 1.45 | 31.00 | 30.41 | 1.83 | 13.67 | 13.59 | 0.55 | 1.60 | 12.77 | 0.00 | 1.49 |
| CO [g/h] | 101.52 | 2166.56 | 2125.35 | 128.13 | 955.28 | 949.68 | 38.22 | 112.14 | 892.91 | 0.00 | 104.08 |
| NOx [g/h] | 19.75 | 421.53 | 413.52 | 24.93 | 185.86 | 184.77 | 7.44 | 21.82 | 173.73 | 0.00 | 20.25 |
| VOC [g/h] | 23.53 | 502.12 | 492.57 | 29.69 | 221.39 | 220.10 | 8.86 | 25.99 | 206.94 | 0.00 | 24.12 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1015 | 1015 | 92 | 92 |
| d_b, Bicycle Delay [s] | 15.75 | 15.75 | 59.14 | 59.14 |
| l_b,int, Bicycle LOS Score for Intersection | 3.104 | 2.664 | 1.697 | 2.472 |
| Bicycle LOS | C | B | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | All-way stop | Delay (sec / veh): | 16.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.709 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 0 | 140 | 0 | 0 | 153 | 32 | 218 | 25 | 77 | 325 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 0 | 140 | 0 | 0 | 153 | 32 | 218 | 25 | 77 | 325 | 0 |
| Peak Hour Factor | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 | 0.9040 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 0 | 39 | 0 | 0 | 42 | 9 | 60 | 7 | 21 | 90 | 0 |
| Total Analysis Volume [veh/h] | 31 | 0 | 155 | 0 | 0 | 169 | 35 | 241 | 28 | 85 | 360 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

**Lanes**

| | | | | | |
|---|---|---|---|---|---|
| Capacity per Entry Lane [veh/h] | 601 | 609 | 528 | 578 | 628 |
| Degree of Utilization, x | 0.31 | 0.28 | 0.07 | 0.47 | 0.71 |

**Movement, Approach, & Intersection Results**

| | | | | | |
|---|---|---|---|---|---|
| 95th-Percentile Queue Length [veh] | 1.31 | 1.13 | 0.21 | 2.46 | 5.82 |
| 95th-Percentile Queue Length [ft] | 32.82 | 28.24 | 5.31 | 61.53 | 145.59 |
| Approach Delay [s/veh] | 11.66 | 11.17 | 13.77 | | 21.47 |
| Approach LOS | B | B | B | | C |
| Intersection Delay [s/veh] | 16.12 | | | | |
| Intersection LOS | C | | | | |

**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 54.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.951 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Peak Hour Factor | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 407 | 26 | 122 | 370 | 21 | 51 | 63 | 9 | 20 | 21 | 75 |
| Total Analysis Volume [veh/h] | 34 | 1628 | 103 | 490 | 1479 | 85 | 204 | 254 | 36 | 81 | 84 | 300 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 41 | 0 | 37 | 68 | 0 | 0 | 52 | 0 | 0 | 52 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 57 | 57 | 32 | 85 | 85 | 24 | 24 | 24 | 24 | 24 |
| g / C, Green / Cycle | 0.03 | 0.44 | 0.44 | 0.25 | 0.66 | 0.66 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.45 | 0.06 | 0.29 | 0.41 | 0.05 | 0.12 | 0.16 | 0.05 | 0.05 | 0.17 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 1700 | 3600 | 1800 | 1700 | 1800 | 1700 | 1800 | 1800 |
| c, Capacity [veh/h] | 47 | 1569 | 785 | 422 | 2365 | 1183 | 284 | 330 | 89 | 330 | 330 |
| d1, Uniform Delay [s] | 62.74 | 36.66 | 21.94 | 48.85 | 12.98 | 8.03 | 49.27 | 51.68 | 45.52 | 45.48 | 52.03 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.90 | 33.03 | 0.35 | 95.36 | 1.26 | 0.12 | 1.28 | 3.01 | 12.47 | 0.15 | 3.99 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.73 | 1.04 | 0.13 | 1.16 | 0.63 | 0.07 | 0.72 | 0.88 | 0.91 | 0.25 | 0.91 |
| d, Delay for Lane Group [s/veh] | 77.64 | 69.70 | 22.28 | 144.21 | 14.24 | 8.14 | 50.55 | 54.69 | 57.99 | 45.63 | 56.02 |
| Lane Group LOS | E | F | C | F | B | A | D | D | E | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.31 | 31.50 | 1.98 | 24.82 | 12.32 | 0.88 | 6.27 | 9.48 | 2.57 | 2.36 | 9.95 |
| 50th-Percentile Queue Length [ft/ln] | 32.78 | 787.51 | 49.60 | 620.52 | 307.92 | 22.12 | 156.83 | 236.99 | 64.32 | 58.99 | 248.77 |
| 95th-Percentile Queue Length [veh/ln] | 2.36 | 41.87 | 3.57 | 35.89 | 18.07 | 1.59 | 10.38 | 14.53 | 4.63 | 4.25 | 15.12 |
| 95th-Percentile Queue Length [ft/ln] | 59.01 | 1046.78 | 89.28 | 897.33 | 451.81 | 39.81 | 259.51 | 363.23 | 115.78 | 106.18 | 378.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 77.64 | 69.70 | 22.28 | 144.21 | 14.24 | 8.14 | 50.55 | 54.69 | 54.69 | 57.99 | 45.63 | 56.02 |
| Movement LOS | E | F | C | F | B | A | D | D | D | E | D | E |
| d_A, Approach Delay [s/veh] | 67.08 | | | 45.00 | | | 52.98 | | | 54.49 | | |
| Approach LOS | E | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 54.90 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.951 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.78 | 85.05 | 5.38 | 32.21 | 97.21 | 5.59 | 11.27 | 16.02 | 2.85 | 2.96 | 10.57 |
| Stops [stops/h] | 36.32 | 1744.64 | 54.94 | 687.34 | 682.15 | 24.50 | 173.71 | 262.51 | 71.25 | 65.34 | 275.56 |
| Fuel consumption [US gal/h] | 0.81 | 36.23 | 0.99 | 19.50 | 12.06 | 0.51 | 3.52 | 5.34 | 1.47 | 1.26 | 5.38 |
| CO [g/h] | 56.68 | 2532.26 | 69.35 | 1363.12 | 842.80 | 35.39 | 246.19 | 373.08 | 102.54 | 88.26 | 375.86 |
| NOx [g/h] | 11.03 | 492.69 | 13.49 | 265.21 | 163.98 | 6.88 | 47.90 | 72.59 | 19.95 | 17.17 | 73.13 |
| VOC [g/h] | 13.14 | 586.88 | 16.07 | 315.92 | 195.33 | 8.20 | 57.06 | 86.46 | 23.76 | 20.46 | 87.11 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.441 | 2.184 | 2.468 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 515 | 931 | 723 | 723 |
| d_b, Bicycle Delay [s] | 35.82 | 18.58 | 26.50 | 26.50 |
| l_b,int, Bicycle LOS Score for Intersection | 3.016 | 3.254 | 2.375 | 2.327 |
| Bicycle LOS | C | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.225 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 51 | 349 | 0 | 777 | 108 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 0.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 51 | 0 | 0 | 777 | 108 | 0 |
| Peak Hour Factor | 0.8670 | 0.8670 | 0.9500 | 0.8670 | 0.8670 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 0 | 0 | 224 | 31 | 0 |
| Total Analysis Volume [veh/h] | 59 | 0 | 0 | 896 | 125 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 22.70 | 8.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | C | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 21.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 22.70 | | 0.00 | | 0.00 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 1.24 | | | | | |
| Intersection LOS | C | | | | | |

# Appendix I

Horizon Year (2040)

With Project Conditions

With Intersection Improvements

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 46.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.976 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 206 | 1093 | 9 | 378 | 2624 | 45 | 97 | 984 | 351 | 13 | 1202 | 625 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 206 | 1093 | 9 | 378 | 2624 | 45 | 97 | 984 | 351 | 13 | 1202 | 625 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 54 | 288 | 2 | 99 | 691 | 12 | 26 | 259 | 92 | 3 | 316 | 164 |
| Total Analysis Volume [veh/h] | 217 | 1151 | 9 | 398 | 2762 | 47 | 102 | 1036 | 369 | 14 | 1265 | 658 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 125 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 19 | 0 | 6 | 19 | 0 | 10 | 9 | 0 | 10 | 9 | 9 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| Split [s] | 12 | 50 | 0 | 32 | 70 | 0 | 11 | 33 | 0 | 10 | 32 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | No |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | No |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 8 | 46 | 46 | 28 | 66 | 66 | 7 | 33 | 33 | 2 | 28 | 60 |
| g / C, Green / Cycle | 0.06 | 0.37 | 0.37 | 0.22 | 0.53 | 0.53 | 0.06 | 0.26 | 0.26 | 0.02 | 0.22 | 0.48 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.20 | 0.22 | 0.12 | 0.48 | 0.54 | 0.06 | 0.18 | 0.19 | 0.01 | 0.22 | 0.35 |
| s, saturation flow rate [veh/h] | 3400 | 3800 | 1800 | 3400 | 3800 | 1800 | 1800 | 5700 | 1900 | 1800 | 5700 | 1900 |
| c, Capacity [veh/h] | 218 | 1398 | 662 | 762 | 2006 | 950 | 101 | 1485 | 495 | 35 | 1277 | 912 |
| d1, Uniform Delay [s] | 58.49 | 31.22 | 32.06 | 42.63 | 27.02 | 29.50 | 59.00 | 41.76 | 42.41 | 60.57 | 48.37 | 25.85 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.18 | 0.11 | 0.27 | 0.11 | 0.11 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 27.71 | 1.53 | 4.01 | 0.56 | 8.21 | 33.72 | 56.67 | 0.60 | 5.45 | 7.26 | 9.76 | 4.92 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 1.00 | 0.54 | 0.60 | 0.52 | 0.92 | 1.02 | 1.01 | 0.70 | 0.75 | 0.40 | 0.99 | 0.72 |
| d, Delay for Lane Group [s/veh] | 86.20 | 32.75 | 36.07 | 43.18 | 35.23 | 63.22 | 115.67 | 42.36 | 47.85 | 67.83 | 58.13 | 30.77 |
| Lane Group LOS | F | C | D | D | D | F | F | D | D | E | E | C |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 4.11 | 8.72 | 9.79 | 5.17 | 23.98 | 33.35 | 4.66 | 9.21 | 10.66 | 0.49 | 13.58 | 15.37 |
| 50th-Percentile Queue Length [ft/ln] | 102.79 | 218.10 | 244.80 | 129.35 | 599.50 | 833.66 | 116.44 | 230.36 | 266.44 | 12.36 | 339.42 | 384.34 |
| 95th-Percentile Queue Length [veh/ln] | 7.40 | 13.57 | 14.92 | 8.90 | 32.01 | 43.45 | 8.23 | 14.19 | 16.01 | 0.89 | 19.62 | 21.80 |
| 95th-Percentile Queue Length [ft/ln] | 185.02 | 339.20 | 373.10 | 222.62 | 800.28 | 1086.35 | 205.63 | 354.81 | 400.29 | 22.24 | 490.49 | 545.10 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 86.20 | 33.87 | 36.07 | 43.18 | 44.55 | 63.22 | 115.67 | 42.36 | 47.85 | 67.83 | 58.13 | 30.77 |
| Movement LOS | F | C | D | D | D | E | F | D | D | E | E | C |
| d_A, Approach Delay [s/veh] | 42.13 | | | 44.66 | | | 48.67 | | | 48.91 | | |
| Approach LOS | D | | | D | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 46.00 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.976 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 13.89 | 48.75 | 25.50 | 22.90 | 105.98 | 55.66 | 9.53 | 96.84 | 34.49 | 0.89 | 80.65 | 41.95 |
| Stops [stops/h] | 236.83 | 502.51 | 282.01 | 298.03 | 1381.26 | 960.38 | 134.13 | 796.12 | 306.94 | 14.24 | 1173.04 | 442.77 |
| Fuel consumption [US gal/h] | 9.52 | 17.85 | 10.03 | 10.87 | 47.36 | 35.57 | 5.21 | 26.96 | 10.45 | 0.49 | 39.45 | 13.75 |
| CO [g/h] | 665.14 | 1247.65 | 701.08 | 759.67 | 3310.27 | 2486.67 | 364.25 | 1884.28 | 730.33 | 34.08 | 2757.48 | 960.98 |
| NOx [g/h] | 129.41 | 242.75 | 136.41 | 147.80 | 644.06 | 483.82 | 70.87 | 366.61 | 142.10 | 6.63 | 536.51 | 186.97 |
| VOC [g/h] | 154.15 | 289.16 | 162.48 | 176.06 | 767.19 | 576.31 | 84.42 | 436.70 | 169.26 | 7.90 | 639.07 | 222.72 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 736 | 1056 | 464 | 448 |
| d_b, Bicycle Delay [s] | 24.96 | 13.92 | 36.86 | 37.64 |
| l_b,int, Bicycle LOS Score for Intersection | 2.317 | 3.323 | 2.388 | 2.625 |
| Bicycle LOS | B | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 40.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.918 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 71 | 1131 | 559 | 455 | 2255 | 29 | 5 | 0 | 29 | 349 | 0 | 437 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 71 | 1131 | 559 | 455 | 2255 | 29 | 5 | 0 | 29 | 349 | 0 | 437 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 19 | 298 | 147 | 120 | 593 | 8 | 1 | 0 | 8 | 92 | 0 | 115 |
| Total Analysis Volume [veh/h] | 75 | 1191 | 588 | 479 | 2374 | 31 | 5 | 0 | 31 | 367 | 0 | 460 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 8 | 9 | 0 | 8 | 9 | 0 | 8 | 18 | 0 | 6 | 19 | 0 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 15 | 73 | 0 | 29 | 87 | 0 | 10 | 18 | 0 | 10 | 18 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | Yes | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 0.00 | 2.00 |
| g_i, Effective Green Time [s] | 7 | 73 | 73 | 21 | 87 | 87 | 1 | 14 | 24 | 25 | 19 |
| g / C, Green / Cycle | 0.05 | 0.56 | 0.56 | 0.16 | 0.67 | 0.67 | 0.01 | 0.11 | 0.19 | 0.19 | 0.15 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.21 | 0.31 | 0.14 | 0.63 | 0.67 | 0.00 | 0.02 | 0.14 | 0.17 | 0.15 |
| s, saturation flow rate [veh/h] | 1800 | 5700 | 1900 | 3400 | 1900 | 1800 | 1800 | 1800 | 1800 | 1750 | 1900 |
| c, Capacity [veh/h] | 96 | 3211 | 1070 | 540 | 1271 | 1204 | 55 | 195 | 391 | 416 | 279 |
| d1, Uniform Delay [s] | 60.81 | 15.66 | 17.94 | 53.54 | 19.39 | 21.44 | 64.17 | 52.56 | 50.20 | 49.12 | 55.45 |
| k, delay calibration | 0.11 | 0.11 | 0.13 | 0.11 | 0.44 | 0.48 | 0.11 | 0.50 | 0.50 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.06 | 0.07 | 0.55 | 5.15 | 13.88 | 25.06 | 0.70 | 1.73 | 8.09 | 9.30 | 57.54 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.78 | 0.37 | 0.55 | 0.89 | 0.95 | 1.00 | 0.09 | 0.16 | 0.65 | 0.70 | 1.01 |
| d, Delay for Lane Group [s/veh] | 73.88 | 15.73 | 18.49 | 58.69 | 33.27 | 46.50 | 64.87 | 54.28 | 58.30 | 58.41 | 112.99 |
| Lane Group LOS | E | B | B | E | C | D | E | D | E | E | F |
| Critical Lane Group | Yes | No | No | No | No | Yes | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.69 | 5.79 | 9.96 | 7.67 | 30.07 | 36.22 | 0.18 | 1.02 | 8.59 | 10.14 | 13.46 |
| 50th-Percentile Queue Length [ft/ln] | 67.26 | 144.84 | 248.94 | 191.75 | 751.85 | 905.54 | 4.40 | 25.47 | 214.76 | 253.50 | 336.45 |
| 95th-Percentile Queue Length [veh/ln] | 4.84 | 9.74 | 15.13 | 12.21 | 39.07 | 46.09 | 0.32 | 1.83 | 13.40 | 15.36 | 19.61 |
| 95th-Percentile Queue Length [ft/ln] | 121.07 | 243.53 | 378.32 | 305.30 | 976.70 | 1152.29 | 7.92 | 45.84 | 334.93 | 384.05 | 490.25 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 73.88 | 15.73 | 18.49 | 58.69 | 39.80 | 46.50 | 64.87 | 54.28 | 54.28 | 58.33 | 58.41 | 90.81 |
| Movement LOS | E | B | B | E | D | D | E | D | D | E | E | F |
| d_A, Approach Delay [s/veh] | 18.96 | | | 43.01 | | | 55.75 | | | 77.07 | | |
| Approach LOS | B | | | D | | | E | | | E | | |
| d_I, Intersection Delay [s/veh] | 40.16 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.918 | | | | | | | | | | | |

**Emissions**

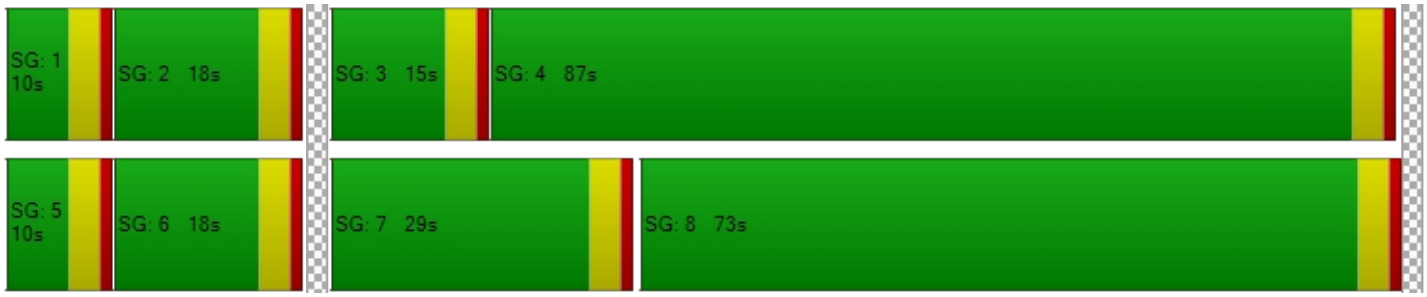
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.49 | 39.53 | 19.52 | 39.53 | 99.25 | 99.25 | 0.12 | 0.74 | 9.84 | 11.24 | 10.98 |
| Stops [stops/h] | 74.51 | 481.32 | 275.75 | 424.80 | 832.82 | 1003.05 | 4.87 | 28.21 | 237.89 | 280.80 | 372.68 |
| Fuel consumption [US gal/h] | 2.86 | 15.80 | 8.98 | 16.46 | 29.94 | 36.94 | 0.10 | 0.53 | 5.70 | 6.61 | 10.57 |
| CO [g/h] | 199.88 | 1104.71 | 627.39 | 1150.65 | 2092.98 | 2582.28 | 6.84 | 36.95 | 398.48 | 461.81 | 738.50 |
| NOx [g/h] | 38.89 | 214.94 | 122.07 | 223.87 | 407.22 | 502.42 | 1.33 | 7.19 | 77.53 | 89.85 | 143.69 |
| VOC [g/h] | 46.32 | 256.03 | 145.40 | 266.67 | 485.07 | 598.47 | 1.58 | 8.56 | 92.35 | 107.03 | 171.16 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1062 | 1277 | 215 | 369 |
| d_b, Bicycle Delay [s] | 14.31 | 8.50 | 51.75 | 43.22 |
| l_b,int, Bicycle LOS Score for Intersection | 2.579 | 3.939 | 1.619 | 2.924 |
| Bicycle LOS | B | D | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 29.9 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.599 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 417 | 0 | 201 | 0 | 0 | 82 | 334 | 604 | 416 | 405 | 301 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 417 | 0 | 201 | 0 | 0 | 82 | 334 | 604 | 416 | 405 | 301 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 110 | 0 | 53 | 0 | 0 | 22 | 88 | 159 | 109 | 107 | 79 | 0 |
| Total Analysis Volume [veh/h] | 439 | 0 | 212 | 0 | 0 | 86 | 352 | 636 | 438 | 426 | 317 | 0 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 2.00 |

**Phasing & Timing (Basic)**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 28 | 28 | 28 | 24 | 24 | 24 | 24 | 24 |
| g / C, Green / Cycle | 0.47 | 0.47 | 0.47 | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| (v / s)_i Volume / Saturation Flow Rate | 0.24 | 0.12 | 0.05 | 0.20 | 0.33 | 0.23 | 0.24 | 0.18 |
| s, saturation flow rate [veh/h] | 1800 | 1800 | 1750 | 1800 | 1900 | 1900 | 1800 | 1800 |
| c, Capacity [veh/h] | 789 | 843 | 879 | 617 | 757 | 757 | 350 | 717 |
| d1, Uniform Delay [s] | 11.22 | 9.62 | 8.92 | 13.49 | 16.32 | 14.11 | 13.47 | 13.17 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 2.82 | 0.72 | 0.22 | 0.83 | 2.60 | 0.70 | 103.44 | 0.43 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.56 | 0.25 | 0.10 | 0.57 | 0.84 | 0.58 | 1.22 | 0.44 |
| d, Delay for Lane Group [s/veh] | 14.05 | 10.33 | 9.15 | 14.33 | 18.92 | 14.81 | 116.92 | 13.60 |
| Lane Group LOS | B | B | A | B | B | B | F | B |
| Critical Lane Group | Yes | No | No | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 3.82 | 1.49 | 0.59 | 3.08 | 6.96 | 3.96 | 12.97 | 2.67 |
| 50th-Percentile Queue Length [ft/ln] | 95.41 | 37.28 | 14.83 | 76.93 | 173.94 | 99.11 | 324.35 | 66.63 |
| 95th-Percentile Queue Length [veh/ln] | 6.87 | 2.68 | 1.07 | 5.54 | 11.28 | 7.14 | 21.16 | 4.80 |
| 95th-Percentile Queue Length [ft/ln] | 171.75 | 67.11 | 26.70 | 138.47 | 282.09 | 178.40 | 528.90 | 119.94 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 14.05 | 10.33 | 10.33 | 9.15 | 9.15 | 9.15 | 14.33 | 18.92 | 14.81 | 116.92 | 13.60 | 13.60 |
| Movement LOS | B | B | B | A | A | A | B | B | B | F | B | B |
| d_A, Approach Delay [s/veh] | 12.84 | | | 9.15 | | | 16.52 | | | 72.84 | | |
| Approach LOS | B | | | A | | | B | | | E | | |
| d_I, Intersection Delay [s/veh] | 29.88 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.599 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 12.13 | 5.86 | 2.03 | 21.99 | 39.72 | 27.36 | 16.23 | 12.08 |
| Stops [stops/h] | 228.99 | 89.48 | 35.60 | 184.62 | 417.46 | 237.87 | 778.45 | 159.92 |
| Fuel consumption [US gal/h] | 3.94 | 1.53 | 0.44 | 3.63 | 7.97 | 4.64 | 18.36 | 2.88 |
| CO [g/h] | 275.34 | 107.29 | 30.79 | 253.56 | 557.28 | 324.11 | 1283.58 | 201.39 |
| NOx [g/h] | 53.57 | 20.87 | 5.99 | 49.33 | 108.43 | 63.06 | 249.74 | 39.18 |
| VOC [g/h] | 63.81 | 24.86 | 7.13 | 58.77 | 129.15 | 75.11 | 297.48 | 46.68 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 200 | 200 | 1533 | 1533 |
| d_b, Bicycle Delay [s] | 24.30 | 24.30 | 1.63 | 1.63 |
| l_b,int, Bicycle LOS Score for Intersection | 2.634 | 1.702 | 3.913 | 2.786 |
| Bicycle LOS | B | A | D | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 56.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.957 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 473 | 25 | 68 | 495 | 128 | 22 | 22 | 3 | 20 | 53 | 125 |
| Total Analysis Volume [veh/h] | 59 | 1893 | 99 | 273 | 1981 | 511 | 86 | 89 | 14 | 80 | 213 | 499 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 35 | 0 | 0 | 35 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 70 | 0 | 19 | 79 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 5 | 63 | 63 | 14 | 72 | 72 | 35 | 35 | 35 | 35 | 35 |
| g / C, Green / Cycle | 0.04 | 0.48 | 0.48 | 0.11 | 0.55 | 0.55 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.50 | 0.05 | 0.15 | 0.52 | 0.27 | 0.03 | 0.06 | 0.04 | 0.11 | 0.26 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 3400 | 1800 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 74 | 1841 | 921 | 200 | 2106 | 1053 | 612 | 488 | 438 | 516 | 516 |
| d1, Uniform Delay [s] | 61.32 | 33.25 | 18.08 | 57.35 | 26.77 | 17.53 | 35.14 | 36.33 | 35.84 | 38.57 | 46.45 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.38 | 0.50 | 0.50 | 0.04 | 0.04 | 0.04 | 0.04 | 0.40 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 13.42 | 28.54 | 0.24 | 188.33 | 9.88 | 1.60 | 0.04 | 0.08 | 0.07 | 0.20 | 28.43 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.80 | 1.03 | 0.11 | 1.37 | 0.94 | 0.49 | 0.14 | 0.21 | 0.18 | 0.41 | 0.97 |
| d, Delay for Lane Group [s/veh] | 74.74 | 61.79 | 18.32 | 245.68 | 36.65 | 19.13 | 35.18 | 36.41 | 35.91 | 38.77 | 74.87 |
| Lane Group LOS | E | F | B | F | D | B | D | D | D | D | E |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.20 | 35.13 | 1.69 | 16.94 | 29.97 | 9.62 | 1.03 | 2.55 | 1.95 | 5.60 | 19.79 |
| 50th-Percentile Queue Length [ft/ln] | 54.89 | 878.34 | 42.21 | 423.53 | 749.27 | 240.41 | 25.70 | 63.71 | 48.84 | 140.01 | 494.72 |
| 95th-Percentile Queue Length [veh/ln] | 3.95 | 45.88 | 3.04 | 26.58 | 38.95 | 14.70 | 1.85 | 4.59 | 3.52 | 9.48 | 27.08 |
| 95th-Percentile Queue Length [ft/ln] | 98.81 | 1146.98 | 75.97 | 664.45 | 973.73 | 367.56 | 46.26 | 114.67 | 87.91 | 237.03 | 677.11 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 74.74 | 61.79 | 18.32 | 245.68 | 36.65 | 19.13 | 35.18 | 36.41 | 36.41 | 35.91 | 38.77 | 74.87 |
| Movement LOS | E | F | B | F | D | B | D | D | D | D | D | E |
| d_A, Approach Delay [s/veh] | 60.06 | | | 54.05 | | | 35.85 | | | 61.23 | | |
| Approach LOS | E | | | D | | | D | | | E | | |
| d_I, Intersection Delay [s/veh] | 56.56 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.957 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.08 | 98.89 | 5.17 | 17.94 | 130.20 | 33.59 | 4.75 | 5.69 | 2.82 | 7.50 | 17.58 |
| Stops [stops/h] | 61.28 | 1960.94 | 47.11 | 472.78 | 1672.80 | 268.37 | 57.37 | 71.12 | 54.52 | 156.28 | 552.25 |
| Fuel consumption [US gal/h] | 1.36 | 38.71 | 0.84 | 17.00 | 29.38 | 4.85 | 1.13 | 1.39 | 1.00 | 2.85 | 11.38 |
| CO [g/h] | 95.25 | 2705.48 | 58.87 | 1188.08 | 2053.32 | 339.33 | 78.86 | 97.17 | 70.03 | 199.40 | 795.24 |
| NOx [g/h] | 18.53 | 526.39 | 11.45 | 231.16 | 399.50 | 66.02 | 15.34 | 18.91 | 13.63 | 38.80 | 154.73 |
| VOC [g/h] | 22.07 | 627.02 | 13.64 | 275.35 | 475.88 | 78.64 | 18.28 | 22.52 | 16.23 | 46.21 | 184.31 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 53.97 | 53.97 | 53.97 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.444 | 2.385 | 2.454 |
| Crosswalk LOS | F | C | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 969 | 1109 | 543 | 543 |
| d_b, Bicycle Delay [s] | 17.14 | 12.81 | 34.25 | 34.25 |
| l_b,int, Bicycle LOS Score for Intersection | 3.252 | 3.841 | 1.871 | 2.866 |
| Bicycle LOS | C | D | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.030 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 17 | 810 | 0 | 345 | 37 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 0.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 17 | 0 | 0 | 345 | 37 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 0 | 0 | 91 | 10 | 0 |
| Total Analysis Volume [veh/h] | 18 | 0 | 0 | 363 | 39 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.14 | 8.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | B | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 2.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.14 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 0.48 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: U.S. Route 395 (NS) at Main Street - Phelan Road (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 57.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.004 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 278.00 | 100.00 | 100.00 | 240.00 | 100.00 | 100.00 | 337.00 | 100.00 | 100.00 | 247.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 55.00 | | | 55.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Main Street - Phelan Road | | | Main Street - Phelan Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 400 | 2627 | 74 | 638 | 1453 | 91 | 50 | 1051 | 163 | 7 | 688 | 356 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 400 | 2627 | 74 | 638 | 1453 | 91 | 50 | 1051 | 163 | 7 | 688 | 356 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 105 | 691 | 19 | 168 | 382 | 24 | 13 | 277 | 43 | 2 | 181 | 94 |
| Total Analysis Volume [veh/h] | 421 | 2765 | 78 | 672 | 1529 | 96 | 53 | 1106 | 172 | 7 | 724 | 375 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 125 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 3 | 8 | 0 | 7 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 19 | 0 | 6 | 19 | 0 | 10 | 9 | 0 | 10 | 9 | 9 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 60 | 65 | 0 | 27 | 32 | 0 | 17 | 22 | 0 | 11 | 16 | 16 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | No | No | | No | No | No |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | No |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | C | L | C | R | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 18 | 61 | 61 | 23 | 66 | 66 | 5 | 24 | 24 | 1 | 20 | 47 |
| g / C, Green / Cycle | 0.15 | 0.49 | 0.49 | 0.18 | 0.53 | 0.53 | 0.04 | 0.19 | 0.19 | 0.01 | 0.16 | 0.38 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.49 | 0.54 | 0.20 | 0.28 | 0.31 | 0.03 | 0.19 | 0.09 | 0.00 | 0.13 | 0.20 |
| s, saturation flow rate [veh/h] | 3400 | 3800 | 1800 | 3400 | 3800 | 1800 | 1800 | 5700 | 1900 | 1800 | 5700 | 1900 |
| c, Capacity [veh/h] | 498 | 1858 | 880 | 626 | 2001 | 948 | 73 | 1076 | 359 | 19 | 904 | 712 |
| d1, Uniform Delay [s] | 51.98 | 31.95 | 31.95 | 51.00 | 19.52 | 20.21 | 59.29 | 50.71 | 45.23 | 61.44 | 50.68 | 30.45 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 4.06 | 21.69 | 66.13 | 40.75 | 1.03 | 2.61 | 12.86 | 20.80 | 1.00 | 11.78 | 1.70 | 2.78 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.85 | 1.00 | 1.11 | 1.07 | 0.54 | 0.58 | 0.73 | 1.03 | 0.48 | 0.37 | 0.80 | 0.53 |
| d, Delay for Lane Group [s/veh] | 56.05 | 53.64 | 98.07 | 91.75 | 20.56 | 22.82 | 72.14 | 71.51 | 46.23 | 73.22 | 52.38 | 33.23 |
| Lane Group LOS | E | F | F | F | C | C | E | F | D | E | D | C |
| Critical Lane Group | No | No | Yes | Yes | No | No | No | Yes | No | Yes | No | No |
| 50th-Percentile Queue Length [veh/ln] | 6.38 | 30.15 | 39.43 | 12.77 | 9.41 | 10.41 | 1.86 | 12.74 | 4.66 | 0.27 | 7.10 | 8.81 |
| 50th-Percentile Queue Length [ft/ln] | 159.55 | 753.81 | 985.67 | 319.33 | 235.19 | 260.13 | 46.51 | 318.41 | 116.59 | 6.87 | 177.56 | 220.22 |
| 95th-Percentile Queue Length [veh/ln] | 10.52 | 39.27 | 53.96 | 19.31 | 14.44 | 15.70 | 3.35 | 18.86 | 8.21 | 0.49 | 11.47 | 13.68 |
| 95th-Percentile Queue Length [ft/ln] | 263.12 | 981.66 | 1349.07 | 482.87 | 360.95 | 392.39 | 83.71 | 471.58 | 205.13 | 12.36 | 286.82 | 341.91 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 56.05 | 68.12 | 98.07 | 91.75 | 21.23 | 22.82 | 72.14 | 71.51 | 46.23 | 73.22 | 52.38 | 33.23 |
| Movement LOS | E | F | F | F | C | C | E | F | D | E | D | C |
| d_A, Approach Delay [s/veh] | 67.28 | | | 41.93 | | | 68.27 | | | 46.02 | | |
| Approach LOS | E | | | D | | | E | | | D | | |
| d_I, Intersection Delay [s/veh] | 57.22 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 1.004 | | | | | | | | | | | |

**Emissions**

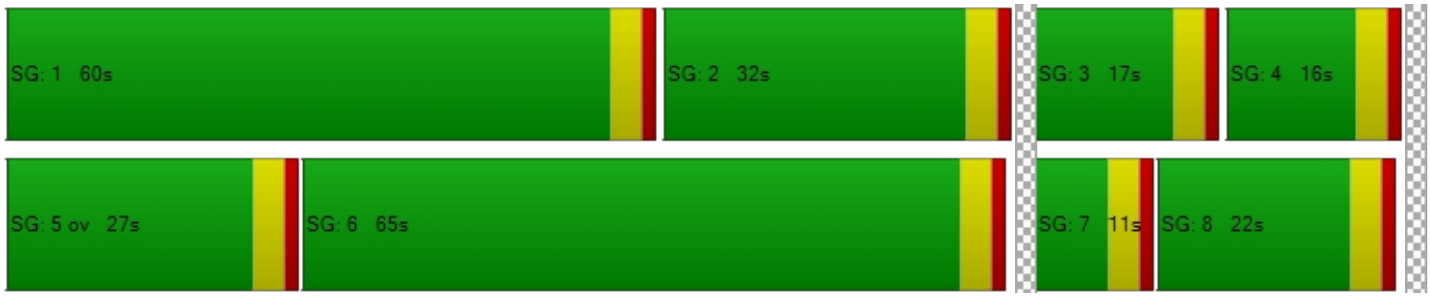
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 26.95 | 119.30 | 62.66 | 38.67 | 61.74 | 31.77 | 4.95 | 103.38 | 16.08 | 0.45 | 46.16 | 23.91 |
| Stops [stops/h] | 367.60 | 1736.77 | 1135.49 | 735.73 | 541.88 | 299.67 | 53.58 | 1100.42 | 134.31 | 7.91 | 613.64 | 253.70 |
| Fuel consumption [US gal/h] | 13.85 | 62.81 | 46.78 | 30.13 | 18.58 | 10.27 | 1.94 | 39.99 | 4.65 | 0.27 | 20.66 | 8.05 |
| CO [g/h] | 967.96 | 4390.69 | 3269.75 | 2106.10 | 1298.49 | 718.18 | 135.53 | 2795.38 | 325.08 | 18.61 | 1444.03 | 562.56 |
| NOx [g/h] | 188.33 | 854.27 | 636.18 | 409.77 | 252.64 | 139.73 | 26.37 | 543.88 | 63.25 | 3.62 | 280.96 | 109.45 |
| VOC [g/h] | 224.33 | 1017.58 | 757.80 | 488.11 | 300.94 | 166.44 | 31.41 | 647.86 | 75.34 | 4.31 | 334.67 | 130.38 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 976 | 448 | 288 | 192 |
| d_b, Bicycle Delay [s] | 16.38 | 37.64 | 45.80 | 51.08 |
| l_b,int, Bicycle LOS Score for Intersection | 3.355 | 2.823 | 2.292 | 2.168 |
| Bicycle LOS | C | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 2: U.S. Route 395 (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 40.1 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.905 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 13.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 13.00 | 12.00 | 20.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 373.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 200.00 |
| Speed [mph] | 60.00 | | | 60.00 | | | 30.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 2742 | 203 | 424 | 1136 | 15 | 25 | 0 | 56 | 526 | 0 | 419 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 2742 | 203 | 424 | 1136 | 15 | 25 | 0 | 56 | 526 | 0 | 419 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 722 | 53 | 112 | 299 | 4 | 7 | 0 | 15 | 138 | 0 | 110 |
| Total Analysis Volume [veh/h] | 39 | 2886 | 214 | 446 | 1196 | 16 | 26 | 0 | 59 | 554 | 0 | 441 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 3 | 8 | 0 | 7 | 4 | 0 | 5 | 2 | 0 | 1 | 6 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 8 | 9 | 0 | 8 | 9 | 0 | 8 | 18 | 0 | 6 | 19 | 0 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 70 | 0 | 22 | 82 | 0 | 17 | 10 | 0 | 28 | 21 | 0 |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 | 6 | 6 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | No | No | | Yes | No | |
| Maximum Recall | No | No | | No | No | | No | No | | No | No | |
| Pedestrian Recall | No | No | | No | No | | No | No | | No | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | C | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 0.00 | 2.00 |
| g_i, Effective Green Time [s] | 5 | 66 | 66 | 18 | 79 | 79 | 4 | 12 | 34 | 34 | 26 |
| g / C, Green / Cycle | 0.03 | 0.51 | 0.51 | 0.14 | 0.61 | 0.61 | 0.03 | 0.09 | 0.26 | 0.26 | 0.20 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.51 | 0.11 | 0.13 | 0.32 | 0.34 | 0.01 | 0.03 | 0.14 | 0.21 | 0.20 |
| s, saturation flow rate [veh/h] | 1800 | 5700 | 1900 | 3400 | 1900 | 1800 | 1800 | 1800 | 1800 | 1750 | 1900 |
| c, Capacity [veh/h] | 63 | 2894 | 965 | 471 | 1161 | 1100 | 55 | 162 | 504 | 536 | 385 |
| d1, Uniform Delay [s] | 61.88 | 31.91 | 17.75 | 55.53 | 14.43 | 14.80 | 62.28 | 55.65 | 41.07 | 42.12 | 51.48 |
| k, delay calibration | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.14 | 0.11 | 0.50 | 0.25 | 0.50 | 0.50 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 9.61 | 7.18 | 0.11 | 10.35 | 0.39 | 0.55 | 6.06 | 6.23 | 1.71 | 7.37 | 39.56 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.62 | 1.00 | 0.22 | 0.95 | 0.52 | 0.55 | 0.47 | 0.36 | 0.49 | 0.70 | 0.97 |
| d, Delay for Lane Group [s/veh] | 71.49 | 39.09 | 17.87 | 65.88 | 14.82 | 15.34 | 68.34 | 61.88 | 42.77 | 49.49 | 91.04 |
| Lane Group LOS | E | D | B | E | B | B | E | E | D | D | F |
| Critical Lane Group | No | Yes | No | Yes | No | No | Yes | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.39 | 28.29 | 3.29 | 7.57 | 8.85 | 9.09 | 0.94 | 2.11 | 6.90 | 12.21 | 16.10 |
| 50th-Percentile Queue Length [ft/ln] | 34.69 | 707.16 | 82.34 | 189.29 | 221.27 | 227.33 | 23.57 | 52.70 | 172.40 | 305.19 | 402.42 |
| 95th-Percentile Queue Length [veh/ln] | 2.50 | 37.01 | 5.93 | 12.08 | 13.73 | 14.04 | 1.70 | 3.79 | 11.20 | 17.94 | 22.68 |
| 95th-Percentile Queue Length [ft/ln] | 62.44 | 925.21 | 148.20 | 302.10 | 343.25 | 350.96 | 42.43 | 94.86 | 280.06 | 448.44 | 566.91 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 71.49 | 39.09 | 17.87 | 65.88 | 15.08 | 15.34 | 68.34 | 61.88 | 61.88 | 46.16 | 49.49 | 80.74 |
| Movement LOS | E | D | B | E | B | B | E | E | E | D | D | F |
| d_A, Approach Delay [s/veh] | 38.05 | | | 28.75 | | | 63.85 | | | 63.46 | | |
| Approach LOS | D | | | C | | | E | | | E | | |
| d_I, Intersection Delay [s/veh] | 40.10 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.905 | | | | | | | | | | | |

**Emissions**

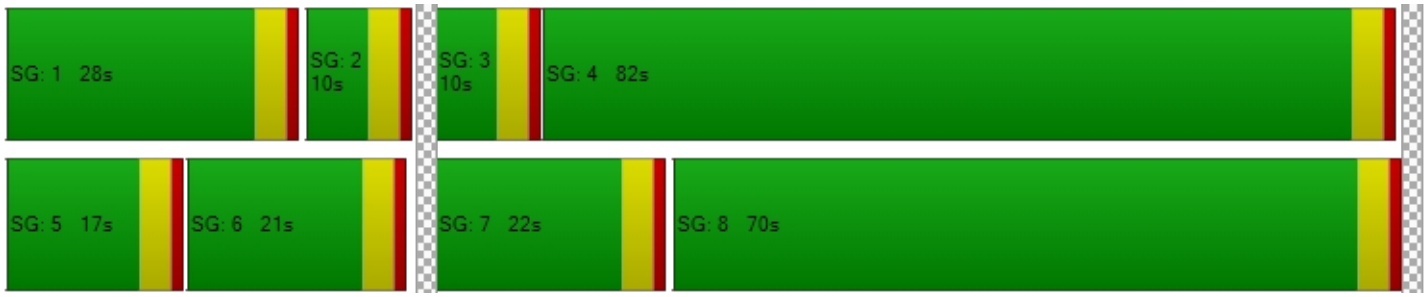
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.29 | 95.80 | 7.10 | 36.81 | 50.07 | 49.96 | 0.62 | 1.40 | 9.55 | 14.51 | 14.51 |
| Stops [stops/h] | 38.42 | 2349.93 | 91.20 | 419.34 | 245.10 | 251.81 | 26.11 | 58.37 | 190.96 | 338.05 | 445.75 |
| Fuel consumption [US gal/h] | 1.46 | 78.18 | 3.04 | 16.51 | 8.96 | 9.16 | 0.53 | 1.12 | 4.36 | 7.61 | 11.83 |
| CO [g/h] | 102.12 | 5464.57 | 212.28 | 1153.78 | 626.23 | 640.53 | 37.13 | 78.49 | 304.87 | 531.96 | 827.13 |
| NOx [g/h] | 19.87 | 1063.21 | 41.30 | 224.48 | 121.84 | 124.62 | 7.22 | 15.27 | 59.32 | 103.50 | 160.93 |
| VOC [g/h] | 23.67 | 1266.47 | 49.20 | 267.40 | 145.14 | 148.45 | 8.61 | 18.19 | 70.66 | 123.29 | 191.69 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1015 | 1200 | 92 | 523 |
| d_b, Bicycle Delay [s] | 15.75 | 10.40 | 59.14 | 35.45 |
| l_b,int, Bicycle LOS Score for Intersection | 3.286 | 2.927 | 1.700 | 3.201 |
| Bicycle LOS | C | C | A | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 3: Three Flags Avenue (NS) at Poplar Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 24.2 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.457 |

**Intersection Setup**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 16.00 | 16.00 | 14.00 | 14.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | | 30.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | No | | | No | | | No | | | No | | |
| Crosswalk | No | | | No | | | No | | | No | | |

**Volumes**

| Name | Three Flags Avenue | | | Three Flags Avenue | | | Poplar Street | | | Poplar Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 337 | 0 | 226 | 0 | 0 | 272 | 60 | 407 | 364 | 298 | 419 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 337 | 0 | 226 | 0 | 0 | 272 | 60 | 407 | 364 | 298 | 419 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 89 | 0 | 59 | 0 | 0 | 72 | 16 | 107 | 96 | 78 | 110 | 0 |
| Total Analysis Volume [veh/h] | 355 | 0 | 238 | 0 | 0 | 286 | 63 | 428 | 383 | 314 | 441 | 0 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 60 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 2.00 |

**Phasing & Timing (Basic)**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 46 | 0 | 0 | 46 | 0 |
| Amber [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 50 | 0 | 0 | 50 | 0 |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Vehicle Extension [s] | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Minimum Recall | | No | | | No | | | No | | | No | |
| Maximum Recall | | No | | | No | | | No | | | No | |
| Pedestrian Recall | | No | | | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | L | C | R | L | C |
|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 2.00 | 0.00 | 2.00 | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 35 | 35 | 35 | 17 | 17 | 17 | 17 | 17 |
| g / C, Green / Cycle | 0.58 | 0.58 | 0.58 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.20 | 0.13 | 0.16 | 0.04 | 0.23 | 0.20 | 0.17 | 0.25 |
| s, saturation flow rate [veh/h] | 1800 | 1800 | 1750 | 1800 | 1900 | 1900 | 1800 | 1800 |
| c, Capacity [veh/h] | 892 | 1036 | 1068 | 242 | 553 | 553 | 281 | 524 |
| d1, Uniform Delay [s] | 6.72 | 6.22 | 6.45 | 15.63 | 19.47 | 18.90 | 17.88 | 19.98 |
| k, delay calibration | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 1.33 | 0.52 | 0.62 | 0.56 | 2.36 | 1.57 | 63.49 | 3.77 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.40 | 0.23 | 0.27 | 0.26 | 0.77 | 0.69 | 1.12 | 0.84 |
| d, Delay for Lane Group [s/veh] | 8.05 | 6.74 | 7.07 | 16.20 | 21.83 | 20.47 | 81.37 | 23.75 |
| Lane Group LOS | A | A | A | B | C | C | F | C |
| Critical Lane Group | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.97 | 1.17 | 1.61 | 0.59 | 5.06 | 4.32 | 7.79 | 5.52 |
| 50th-Percentile Queue Length [ft/ln] | 49.23 | 29.15 | 40.14 | 14.83 | 126.52 | 108.02 | 194.82 | 137.89 |
| 95th-Percentile Queue Length [veh/ln] | 3.54 | 2.10 | 2.89 | 1.07 | 8.75 | 7.73 | 13.10 | 9.37 |
| 95th-Percentile Queue Length [ft/ln] | 88.61 | 52.47 | 72.25 | 26.69 | 218.76 | 193.25 | 327.48 | 234.18 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 8.05 | 6.74 | 6.74 | 7.07 | 7.07 | 7.07 | 16.20 | 21.83 | 20.47 | 81.37 | 23.75 | 23.75 |
| Movement LOS | A | A | A | A | A | A | B | C | C | F | C | C |
| d_A, Approach Delay [s/veh] | 7.53 | | | 7.07 | | | 20.83 | | | 47.71 | | |
| Approach LOS | A | | | A | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 24.21 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.457 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 9.81 | 6.58 | 6.76 | 3.93 | 26.73 | 23.92 | 11.96 | 16.80 |
| Stops [stops/h] | 118.15 | 69.96 | 96.33 | 35.59 | 303.66 | 259.25 | 467.56 | 330.94 |
| Fuel consumption [US gal/h] | 2.09 | 1.25 | 1.22 | 0.70 | 5.84 | 5.00 | 10.22 | 5.98 |
| CO [g/h] | 146.37 | 87.32 | 85.40 | 48.81 | 408.39 | 349.43 | 714.42 | 418.31 |
| NOx [g/h] | 28.48 | 16.99 | 16.62 | 9.50 | 79.46 | 67.99 | 139.00 | 81.39 |
| VOC [g/h] | 33.92 | 20.24 | 19.79 | 11.31 | 94.65 | 80.98 | 165.57 | 96.95 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 0.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS | F | F | F | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 200 | 200 | 1533 | 1533 |
| d_b, Bicycle Delay [s] | 24.30 | 24.30 | 1.63 | 1.63 |
| l_b,int, Bicycle LOS Score for Intersection | 2.538 | 2.032 | 3.002 | 2.805 |
| Bicycle LOS | B | B | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 78.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.943 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 393 | 26 | 101 | 394 | 23 | 145 | 87 | 21 | 67 | 29 | 121 |
| Total Analysis Volume [veh/h] | 44 | 1573 | 102 | 403 | 1578 | 94 | 581 | 346 | 83 | 266 | 117 | 482 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 110 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 4 | 0 | 0 | 8 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Maximum Green [s] | 20 | 50 | 0 | 20 | 50 | 0 | 0 | 40 | 0 | 0 | 40 | 0 |
| Amber [s] | 3.7 | 5.5 | 0.0 | 3.7 | 5.5 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 4.0 | 0.0 |
| All red [s] | 1.0 | 2.0 | 0.0 | 1.0 | 2.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 24 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 34 | 0 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.7 | 5.5 | 0.0 | 2.7 | 5.5 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 11 | 39 | 0 | 19 | 47 | 0 | 0 | 52 | 0 | 0 | 52 | 0 |
| Lead / Lag | Lag | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| Vehicle Extension [s] | 2.5 | 5.0 | 0.0 | 2.5 | 5.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | |
| Maximum Recall | No | No | | No | No | | | No | | | No | |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |
| L, Total Lost Time per Cycle [s] | 4.70 | 7.50 | 7.50 | 4.70 | 7.50 | 7.50 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.70 | 5.50 | 5.50 | 2.70 | 5.50 | 5.50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| g_i, Effective Green Time [s] | 4 | 48 | 48 | 14 | 59 | 59 | 30 | 30 | 30 | 30 | 30 |
| g / C, Green / Cycle | 0.03 | 0.44 | 0.44 | 0.13 | 0.54 | 0.54 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.41 | 0.05 | 0.22 | 0.42 | 0.05 | 0.17 | 0.24 | 0.15 | 0.06 | 0.25 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 1800 | 3800 | 1900 | 3400 | 1800 | 1800 | 1900 | 1900 |
| c, Capacity [veh/h] | 62 | 1673 | 836 | 234 | 2036 | 1018 | 803 | 492 | 142 | 520 | 520 |
| d1, Uniform Delay [s] | 52.57 | 29.41 | 18.22 | 47.85 | 20.27 | 12.47 | 35.01 | 38.12 | 31.51 | 30.94 | 38.90 |
| k, delay calibration | 0.08 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.04 | 0.06 | 0.04 | 0.04 | 0.07 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 10.65 | 11.80 | 0.30 | 342.41 | 2.96 | 0.18 | 0.47 | 2.95 | 398.05 | 0.08 | 5.21 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.71 | 0.94 | 0.12 | 1.72 | 0.78 | 0.09 | 0.72 | 0.87 | 1.88 | 0.23 | 0.93 |
| d, Delay for Lane Group [s/veh] | 63.22 | 41.21 | 18.51 | 390.26 | 23.23 | 12.65 | 35.48 | 41.06 | 429.56 | 31.02 | 44.11 |
| Lane Group LOS | E | D | B | F | C | B | D | D | F | C | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.38 | 21.81 | 1.60 | 28.63 | 16.05 | 1.17 | 6.82 | 11.29 | 18.62 | 2.42 | 13.23 |
| 50th-Percentile Queue Length [ft/ln] | 34.60 | 545.27 | 40.02 | 715.77 | 401.27 | 29.15 | 170.60 | 282.23 | 465.38 | 60.53 | 330.86 |
| 95th-Percentile Queue Length [veh/ln] | 2.49 | 29.47 | 2.88 | 44.95 | 22.62 | 2.10 | 11.11 | 16.80 | 32.48 | 4.36 | 19.20 |
| 95th-Percentile Queue Length [ft/ln] | 62.29 | 736.74 | 72.04 | 1123.63 | 565.53 | 52.47 | 277.71 | 419.99 | 811.88 | 108.96 | 480.02 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 63.22 | 41.21 | 18.51 | 390.26 | 23.23 | 12.65 | 35.48 | 41.06 | 41.06 | 429.56 | 31.02 | 44.11 |
| Movement LOS | E | D | B | F | C | B | D | D | D | F | C | D |
| d_A, Approach Delay [s/veh] | 40.43 | | | 94.03 | | | 37.85 | | | 160.87 | | |
| Approach LOS | D | | | F | | | D | | | F | | |
| d_I, Intersection Delay [s/veh] | 77.97 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.943 | | | | | | | | | | | |

**Emissions**

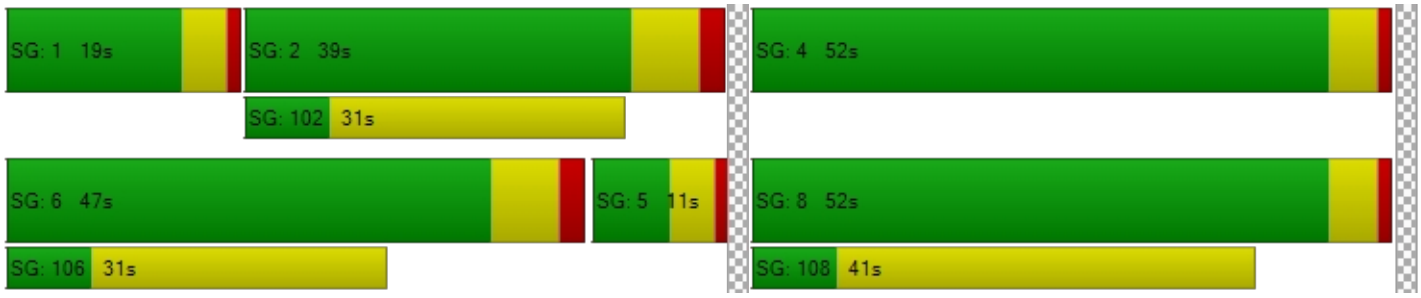
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.30 | 82.17 | 5.33 | 26.49 | 103.72 | 6.18 | 32.10 | 23.70 | 9.37 | 4.12 | 16.98 |
| Stops [stops/h] | 45.30 | 1427.60 | 52.40 | 937.01 | 1050.61 | 38.16 | 446.67 | 369.47 | 609.22 | 79.25 | 433.13 |
| Fuel consumption [US gal/h] | 0.91 | 24.46 | 0.89 | 38.27 | 17.53 | 0.71 | 7.98 | 6.60 | 27.00 | 1.35 | 7.42 |
| CO [g/h] | 63.67 | 1709.87 | 62.43 | 2674.76 | 1225.51 | 49.43 | 558.10 | 461.47 | 1887.22 | 94.08 | 518.53 |
| NOx [g/h] | 12.39 | 332.68 | 12.15 | 520.41 | 238.44 | 9.62 | 108.59 | 89.78 | 367.18 | 18.31 | 100.89 |
| VOC [g/h] | 14.76 | 396.28 | 14.47 | 619.90 | 284.02 | 11.45 | 129.34 | 106.95 | 437.38 | 21.80 | 120.18 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 44.55 | 44.55 | 44.55 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 4.054 | 2.449 | 2.559 |
| Crosswalk LOS | F | D | B | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 573 | 718 | 855 | 855 |
| d_b, Bicycle Delay [s] | 28.01 | 22.59 | 18.04 | 18.04 |
| l_b,int, Bicycle LOS Score for Intersection | 2.978 | 3.271 | 3.226 | 2.987 |
| Bicycle LOS | C | C | C | C |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 6: I-15 Southbound Off-Ramp (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 30.6 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.325 |

**Intersection Setup**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration |  | |  | |  | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 0 | 1 | 0 | 0 | 0 | 0 |
| Entry Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-15 Southbound Off-Ramp | | Joshua Street | | Joshua Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 64 | 511 | 0 | 835 | 299 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.0000 | 0.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 64 | 0 | 0 | 835 | 299 | 0 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 0 | 0 | 220 | 79 | 0 |
| Total Analysis Volume [veh/h] | 67 | 0 | 0 | 879 | 315 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.32 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 30.64 | 9.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| Movement LOS | D | A | | A | A | |
| 95th-Percentile Queue Length [veh/ln] | 1.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 33.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 30.64 | | 0.00 | | 0.00 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 1.63 | | | | | |
| Intersection LOS | D | | | | | |

# Appendix J

Project Opening Year (2026)

With Project Conditions

With Intersection + Queuing Improvements

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 29.7 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.818 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 37 | 1419 | 41 | 231 | 1380 | 169 | 57 | 71 | 17 | 102 | 217 | 509 |
| Peak Hour Factor | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 | 0.9210 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 10 | 385 | 11 | 63 | 375 | 46 | 15 | 19 | 5 | 28 | 59 | 138 |
| Total Analysis Volume [veh/h] | 40 | 1541 | 45 | 251 | 1498 | 183 | 62 | 77 | 18 | 111 | 236 | 553 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 8 | 58 | 0 | 11 | 61 | 0 | 0 | 49 | 0 | 0 | 49 | 49 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 21 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 | 33 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 15 | 70 | 0 | 16 | 71 | 0 | 0 | 44 | 0 | 0 | 44 | 44 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | No |
| Maximum Recall | No | No | | No | No | | | No | | | No | No |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 5 | 69 | 69 | 12 | 76 | 76 | 37 | 37 | 37 | 37 | 53 |
| g / C, Green / Cycle | 0.04 | 0.53 | 0.53 | 0.09 | 0.59 | 0.59 | 0.29 | 0.29 | 0.29 | 0.29 | 0.41 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.43 | 0.03 | 0.08 | 0.42 | 0.10 | 0.04 | 0.05 | 0.03 | 0.07 | 0.31 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 3200 | 3600 | 1800 | 1700 | 1800 | 3200 | 3600 | 1800 |
| c, Capacity [veh/h] | 61 | 1906 | 953 | 295 | 2109 | 1054 | 431 | 515 | 796 | 1029 | 736 |
| d1, Uniform Delay [s] | 61.85 | 25.16 | 14.76 | 58.11 | 19.10 | 12.42 | 34.40 | 34.99 | 34.34 | 35.47 | 32.77 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.33 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 11.15 | 3.82 | 0.09 | 6.77 | 2.06 | 0.36 | 0.15 | 0.17 | 0.08 | 0.11 | 4.68 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.65 | 0.81 | 0.05 | 0.85 | 0.71 | 0.17 | 0.14 | 0.18 | 0.14 | 0.23 | 0.75 |
| d, Delay for Lane Group [s/veh] | 73.00 | 28.97 | 14.85 | 64.88 | 21.16 | 12.77 | 34.55 | 35.16 | 34.42 | 35.58 | 37.45 |
| Lane Group LOS | E | C | B | E | C | B | C | D | C | D | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 1.50 | 20.01 | 0.68 | 4.35 | 16.07 | 2.56 | 1.49 | 2.32 | 1.33 | 2.91 | 15.69 |
| 50th-Percentile Queue Length [ft/ln] | 37.45 | 500.32 | 16.90 | 108.72 | 401.85 | 64.04 | 37.30 | 58.04 | 33.14 | 72.71 | 392.28 |
| 95th-Percentile Queue Length [veh/ln] | 2.70 | 27.35 | 1.22 | 7.77 | 22.65 | 4.61 | 2.69 | 4.18 | 2.39 | 5.23 | 22.19 |
| 95th-Percentile Queue Length [ft/ln] | 67.41 | 683.74 | 30.41 | 194.21 | 566.22 | 115.27 | 67.14 | 104.47 | 59.65 | 130.87 | 554.69 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 73.00 | 28.97 | 14.85 | 64.88 | 21.16 | 12.77 | 34.55 | 35.16 | 35.16 | 34.42 | 35.58 | 37.45 |
| Movement LOS | E | C | B | E | C | B | C | D | D | C | D | D |
| d_A, Approach Delay [s/veh] | 29.67 | | | 26.05 | | | 34.92 | | | 36.59 | | |
| Approach LOS | C | | | C | | | C | | | D | | |
| d_I, Intersection Delay [s/veh] | 29.68 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.818 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.09 | 80.50 | 2.35 | 16.50 | 98.46 | 12.03 | 3.43 | 5.25 | 3.91 | 8.31 | 19.48 |
| Stops [stops/h] | 41.48 | 1108.41 | 18.71 | 240.85 | 890.24 | 70.94 | 41.31 | 64.29 | 73.42 | 161.07 | 434.52 |
| Fuel consumption [US gal/h] | 0.91 | 18.52 | 0.34 | 5.32 | 15.42 | 1.36 | 0.81 | 1.25 | 1.34 | 2.94 | 7.42 |
| CO [g/h] | 63.56 | 1294.82 | 23.50 | 372.10 | 1078.08 | 95.26 | 56.28 | 87.45 | 93.94 | 205.58 | 518.45 |
| NOx [g/h] | 12.37 | 251.92 | 4.57 | 72.40 | 209.76 | 18.53 | 10.95 | 17.01 | 18.28 | 40.00 | 100.87 |
| VOC [g/h] | 14.73 | 300.09 | 5.45 | 86.24 | 249.86 | 22.08 | 13.04 | 20.27 | 21.77 | 47.64 | 120.16 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.269 | 2.299 | 2.789 |
| Crosswalk LOS | F | C | B | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1015 | 1031 | 615 | 615 |
| d_b, Bicycle Delay [s] | 15.75 | 15.27 | 31.15 | 31.15 |
| l_b,int, Bicycle LOS Score for Intersection | 2.901 | 3.154 | 1.819 | 2.302 |
| Bicycle LOS | C | C | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 25.8 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.813 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 33 | 1566 | 99 | 471 | 1423 | 82 | 196 | 244 | 35 | 78 | 81 | 289 |
| Peak Hour Factor | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 | 0.9620 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 407 | 26 | 122 | 370 | 21 | 51 | 63 | 9 | 20 | 21 | 75 |
| Total Analysis Volume [veh/h] | 34 | 1628 | 103 | 490 | 1479 | 85 | 204 | 254 | 36 | 81 | 84 | 300 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 105 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 28 | 0 | 23 | 45 | 0 | 0 | 67 | 0 | 0 | 67 | 67 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 21 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 | 33 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 32 | 0 | 25 | 47 | 0 | 0 | 48 | 0 | 0 | 48 | 48 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | No |
| Maximum Recall | No | No | | No | No | | | No | | | No | No |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 4 | 55 | 55 | 19 | 70 | 70 | 19 | 19 | 19 | 19 | 42 |
| g / C, Green / Cycle | 0.04 | 0.52 | 0.52 | 0.18 | 0.66 | 0.66 | 0.19 | 0.19 | 0.19 | 0.19 | 0.40 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.45 | 0.06 | 0.15 | 0.41 | 0.05 | 0.12 | 0.16 | 0.03 | 0.02 | 0.17 |
| s, saturation flow rate [veh/h] | 1700 | 3600 | 1800 | 3200 | 3600 | 1800 | 1700 | 1800 | 3200 | 3600 | 1800 |
| c, Capacity [veh/h] | 62 | 1882 | 941 | 567 | 2388 | 1194 | 331 | 335 | 139 | 670 | 722 |
| d1, Uniform Delay [s] | 49.76 | 21.84 | 12.69 | 41.98 | 10.09 | 6.24 | 39.53 | 41.47 | 35.69 | 35.62 | 22.59 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 7.47 | 5.62 | 0.24 | 4.11 | 1.22 | 0.12 | 1.87 | 6.77 | 3.80 | 0.08 | 0.38 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.55 | 0.87 | 0.11 | 0.86 | 0.62 | 0.07 | 0.62 | 0.87 | 0.58 | 0.13 | 0.42 |
| d, Delay for Lane Group [s/veh] | 57.23 | 27.46 | 12.92 | 46.09 | 11.31 | 6.36 | 41.40 | 48.24 | 39.50 | 35.70 | 22.98 |
| Lane Group LOS | E | C | B | D | B | A | D | D | D | D | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.00 | 17.84 | 1.27 | 6.43 | 9.08 | 0.65 | 5.01 | 7.85 | 0.94 | 0.91 | 5.33 |
| 50th-Percentile Queue Length [ft/ln] | 25.08 | 446.03 | 31.63 | 160.84 | 226.89 | 16.37 | 125.28 | 196.15 | 23.53 | 22.64 | 133.34 |
| 95th-Percentile Queue Length [veh/ln] | 1.81 | 24.77 | 2.28 | 10.59 | 14.02 | 1.18 | 8.68 | 12.44 | 1.69 | 1.63 | 9.12 |
| 95th-Percentile Queue Length [ft/ln] | 45.15 | 619.21 | 56.93 | 264.84 | 350.40 | 29.46 | 217.06 | 310.99 | 42.35 | 40.75 | 228.03 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 57.23 | 27.46 | 12.92 | 46.09 | 11.31 | 6.36 | 41.40 | 48.24 | 48.24 | 39.50 | 35.70 | 22.98 |
| Movement LOS | E | C | B | D | B | A | D | D | D | D | D | C |
| d_A, Approach Delay [s/veh] | 27.18 | | | 19.40 | | | 45.41 | | | 28.15 | | |
| Approach LOS | C | | | B | | | D | | | C | | |
| d_I, Intersection Delay [s/veh] | 25.82 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.813 | | | | | | | | | | | |

**Emissions**

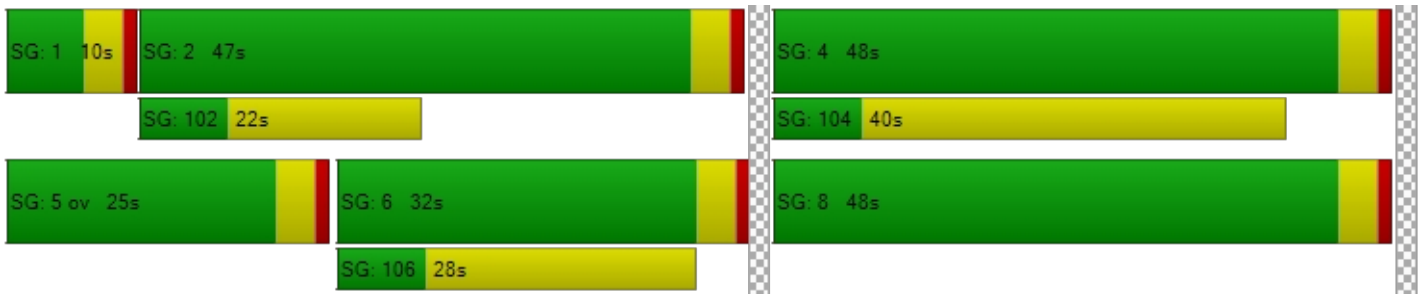
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 1.78 | 85.05 | 5.38 | 32.21 | 97.21 | 5.59 | 11.27 | 16.02 | 2.85 | 2.96 | 10.57 |
| Stops [stops/h] | 34.40 | 1223.39 | 43.38 | 441.17 | 622.32 | 22.45 | 171.81 | 269.00 | 64.53 | 62.09 | 182.87 |
| Fuel consumption [US gal/h] | 0.66 | 19.36 | 0.73 | 8.36 | 10.84 | 0.46 | 3.13 | 4.99 | 1.12 | 1.08 | 2.85 |
| CO [g/h] | 46.07 | 1353.02 | 51.17 | 584.30 | 758.01 | 32.43 | 218.92 | 348.96 | 78.63 | 75.15 | 199.08 |
| NOx [g/h] | 8.96 | 263.25 | 9.96 | 113.68 | 147.48 | 6.31 | 42.59 | 67.89 | 15.30 | 14.62 | 38.73 |
| VOC [g/h] | 10.68 | 313.58 | 11.86 | 135.42 | 175.68 | 7.52 | 50.74 | 80.87 | 18.22 | 17.42 | 46.14 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 42.08 | 42.08 | 42.08 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.474 | 2.308 | 2.784 |
| Crosswalk LOS | F | C | B | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 533 | 819 | 838 | 838 |
| d_b, Bicycle Delay [s] | 28.23 | 18.30 | 17.72 | 17.72 |
| l_b,int, Bicycle LOS Score for Intersection | 3.016 | 3.254 | 2.375 | 1.943 |
| Bicycle LOS | C | C | B | A |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



# Appendix K

Horizon Year (2040)

With Project Conditions

With Intersection + Queuing Improvements

Level of Service Analysis Worksheets

RK19177.5
JN:1219-2023-03

**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 30.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.852 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 1798 | 94 | 259 | 1882 | 485 | 82 | 85 | 13 | 76 | 202 | 474 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 473 | 25 | 68 | 495 | 128 | 22 | 22 | 3 | 20 | 53 | 125 |
| Total Analysis Volume [veh/h] | 59 | 1893 | 99 | 273 | 1981 | 511 | 86 | 89 | 14 | 80 | 213 | 499 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 130 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 8 | 64 | 0 | 12 | 68 | 0 | 0 | 42 | 0 | 0 | 42 | 42 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 21 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 | 33 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 11 | 70 | 0 | 16 | 75 | 0 | 0 | 44 | 0 | 0 | 44 | 44 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | No |
| Maximum Recall | No | No | | No | No | | | No | | | No | No |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 6 | 73 | 73 | 12 | 80 | 80 | 33 | 33 | 33 | 33 | 49 |
| g / C, Green / Cycle | 0.04 | 0.56 | 0.56 | 0.09 | 0.61 | 0.61 | 0.25 | 0.25 | 0.25 | 0.25 | 0.37 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.50 | 0.05 | 0.08 | 0.52 | 0.27 | 0.03 | 0.06 | 0.02 | 0.06 | 0.26 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 3400 | 3800 | 1900 | 3400 | 1800 | 3400 | 3800 | 1900 |
| c, Capacity [veh/h] | 77 | 2146 | 1073 | 314 | 2335 | 1168 | 716 | 451 | 713 | 953 | 710 |
| d1, Uniform Delay [s] | 61.61 | 24.54 | 12.99 | 58.23 | 20.18 | 13.21 | 37.44 | 38.71 | 37.38 | 38.66 | 34.57 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.32 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 14.95 | 5.67 | 0.17 | 7.36 | 4.07 | 1.19 | 0.07 | 0.25 | 0.07 | 0.12 | 3.78 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.77 | 0.88 | 0.09 | 0.87 | 0.85 | 0.44 | 0.12 | 0.23 | 0.11 | 0.22 | 0.70 |
| d, Delay for Lane Group [s/veh] | 76.56 | 30.21 | 13.16 | 65.59 | 24.25 | 14.41 | 37.52 | 38.97 | 37.45 | 38.78 | 38.35 |
| Lane Group LOS | E | C | B | E | C | B | D | D | D | D | D |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 2.25 | 25.89 | 1.39 | 4.76 | 24.13 | 8.09 | 1.07 | 2.67 | 1.00 | 2.74 | 14.10 |
| 50th-Percentile Queue Length [ft/ln] | 56.28 | 647.14 | 34.77 | 118.94 | 603.29 | 202.33 | 26.85 | 66.84 | 24.93 | 68.59 | 352.55 |
| 95th-Percentile Queue Length [veh/ln] | 4.05 | 34.23 | 2.50 | 8.33 | 32.19 | 12.76 | 1.93 | 4.81 | 1.80 | 4.94 | 20.26 |
| 95th-Percentile Queue Length [ft/ln] | 101.31 | 855.74 | 62.58 | 208.36 | 804.70 | 318.97 | 48.34 | 120.32 | 44.88 | 123.47 | 506.51 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 76.56 | 30.21 | 13.16 | 65.59 | 24.25 | 14.41 | 37.52 | 38.97 | 38.97 | 37.45 | 38.78 | 38.35 |
| Movement LOS | E | C | B | E | C | B | D | D | D | D | D | D |
| d_A, Approach Delay [s/veh] | 30.72 | | | 26.51 | | | 38.31 | | | 38.38 | | |
| Approach LOS | C | | | C | | | D | | | D | | |
| d_I, Intersection Delay [s/veh] | 30.01 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.852 | | | | | | | | | | | |

**Emissions**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 3.08 | 98.89 | 5.17 | 17.94 | 130.20 | 33.59 | 4.75 | 5.69 | 2.82 | 7.50 | 17.58 |
| Stops [stops/h] | 62.34 | 1433.66 | 38.51 | 263.49 | 1336.52 | 224.12 | 59.49 | 74.04 | 55.24 | 151.96 | 390.51 |
| Fuel consumption [US gal/h] | 1.39 | 23.63 | 0.69 | 5.84 | 22.52 | 4.12 | 1.18 | 1.46 | 1.03 | 2.83 | 6.78 |
| CO [g/h] | 97.19 | 1651.73 | 48.29 | 408.05 | 1574.07 | 287.92 | 82.54 | 102.06 | 72.05 | 197.77 | 473.61 |
| NOx [g/h] | 18.91 | 321.37 | 9.40 | 79.39 | 306.26 | 56.02 | 16.06 | 19.86 | 14.02 | 38.48 | 92.15 |
| VOC [g/h] | 22.52 | 382.80 | 11.19 | 94.57 | 364.81 | 66.73 | 19.13 | 23.65 | 16.70 | 45.84 | 109.76 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 54.47 | 54.47 | 54.47 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 3.464 | 2.507 | 2.786 |
| Crosswalk LOS | F | C | B | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 1015 | 1092 | 615 | 615 |
| d_b, Bicycle Delay [s] | 15.75 | 13.39 | 31.15 | 31.15 |
| l_b,int, Bicycle LOS Score for Intersection | 3.252 | 3.841 | 1.871 | 2.213 |
| Bicycle LOS | C | D | A | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 5: U.S. Route 395 (NS) at Joshua Street (EW)**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 36.0 |
| Analysis Method: | HCM 7th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Entry Pocket | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Entry Pocket Length [ft] | 190.00 | 100.00 | 143.00 | 191.00 | 100.00 | 273.00 | 94.00 | 100.00 | 100.00 | 65.00 | 100.00 | 65.00 |
| No. of Lanes in Exit Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exit Pocket Length [ft] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Speed [mph] | 30.00 | | | 30.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | Yes | | | Yes | | | Yes | | | Yes | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | U.S. Route 395 | | | U.S. Route 395 | | | Joshua Street | | | Joshua Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Proportion of CAVs [%] | 0.00 | | | | | | | | | | | |
| Growth Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 42 | 1494 | 97 | 383 | 1499 | 89 | 552 | 329 | 79 | 253 | 111 | 458 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 393 | 26 | 101 | 394 | 23 | 145 | 87 | 21 | 67 | 29 | 121 |
| Total Analysis Volume [veh/h] | 44 | 1573 | 102 | 403 | 1578 | 94 | 581 | 346 | 83 | 266 | 117 | 482 |
| Presence of On-Street Parking | No | | No | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Active Pattern | Pattern 1 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | Lead Green - Beginning of First Green |
| Permissive Mode | SingleBand |
| Lost time [s] | 6.00 |

**Phasing & Timing (Basic)**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Overlap |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal Group | 1 | 6 | 0 | 5 | 2 | 0 | 0 | 8 | 0 | 0 | 4 | 4 |
| Auxiliary Signal Groups | | | | | | | | | | | | 4,5 |
| Maximum Green [s] | 6 | 29 | 0 | 14 | 37 | 0 | 0 | 55 | 0 | 0 | 55 | 55 |
| Amber [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| All red [s] | 1.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Walk [s] | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 7 |
| Pedestrian Clearance [s] | 0 | 21 | 0 | 0 | 15 | 0 | 0 | 10 | 0 | 0 | 33 | 33 |
| Delayed Vehicle Green [s] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest In Walk | | No | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Advanced Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Phasing & Timing: Pattern 1**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split [s] | 10 | 32 | 0 | 14 | 36 | 0 | 0 | 44 | 0 | 0 | 44 | 44 |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 6 | 6 | 0 | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 6 |
| Vehicle Extension [s] | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 |
| Minimum Recall | No | No | | No | No | | | No | | | No | No |
| Maximum Recall | No | No | | No | No | | | No | | | No | No |
| Pedestrian Recall | No | No | | No | No | | | No | | | No | No |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | R | L | C | R | L | C | L | C | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C, Calculated Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 2.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s] | 4 | 44 | 44 | 10 | 50 | 50 | 24 | 24 | 24 | 24 | 38 |
| g / C, Green / Cycle | 0.04 | 0.49 | 0.49 | 0.11 | 0.55 | 0.55 | 0.27 | 0.27 | 0.27 | 0.27 | 0.42 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.41 | 0.05 | 0.12 | 0.42 | 0.05 | 0.17 | 0.24 | 0.08 | 0.03 | 0.25 |
| s, saturation flow rate [veh/h] | 1800 | 3800 | 1900 | 3400 | 3800 | 1900 | 3400 | 1800 | 3400 | 3800 | 1900 |
| c, Capacity [veh/h] | 81 | 1852 | 926 | 378 | 2103 | 1051 | 869 | 483 | 195 | 1019 | 805 |
| d1, Uniform Delay [s] | 42.05 | 20.18 | 12.50 | 40.00 | 15.35 | 9.45 | 29.07 | 31.64 | 25.56 | 24.87 | 20.02 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 5.50 | 5.09 | 0.24 | 41.85 | 2.52 | 0.17 | 0.90 | 5.77 | 172.23 | 0.05 | 0.72 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X, volume / capacity | 0.54 | 0.85 | 0.11 | 1.07 | 0.75 | 0.09 | 0.67 | 0.89 | 1.37 | 0.11 | 0.60 |
| d, Delay for Lane Group [s/veh] | 47.55 | 25.27 | 12.74 | 81.85 | 17.87 | 9.61 | 29.97 | 37.41 | 197.80 | 24.92 | 20.74 |
| Lane Group LOS | D | C | B | F | B | A | C | D | F | C | C |
| Critical Lane Group | No | Yes | No | Yes | No | No | No | Yes | No | No | No |
| 50th-Percentile Queue Length [veh/ln] | 1.07 | 14.62 | 1.13 | 6.31 | 11.88 | 0.87 | 5.51 | 9.46 | 6.25 | 0.94 | 7.61 |
| 50th-Percentile Queue Length [ft/ln] | 26.78 | 365.48 | 28.27 | 157.63 | 297.01 | 21.65 | 137.83 | 236.56 | 156.18 | 23.45 | 190.29 |
| 95th-Percentile Queue Length [veh/ln] | 1.93 | 20.89 | 2.04 | 10.68 | 17.53 | 1.56 | 9.36 | 14.51 | 11.25 | 1.69 | 12.14 |
| 95th-Percentile Queue Length [ft/ln] | 48.20 | 522.25 | 50.88 | 267.03 | 438.33 | 38.97 | 234.10 | 362.68 | 281.13 | 42.21 | 303.40 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 47.55 | 25.27 | 12.74 | 81.85 | 17.87 | 9.61 | 29.97 | 37.41 | 37.41 | 197.80 | 24.92 | 20.74 |
| Movement LOS | D | C | B | F | B | A | C | D | D | F | C | C |
| d_A, Approach Delay [s/veh] | 25.10 | | | 29.92 | | | 33.13 | | | 75.75 | | |
| Approach LOS | C | | | C | | | C | | | E | | |
| d_I, Intersection Delay [s/veh] | 36.02 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.826 | | | | | | | | | | | |

**Emissions**

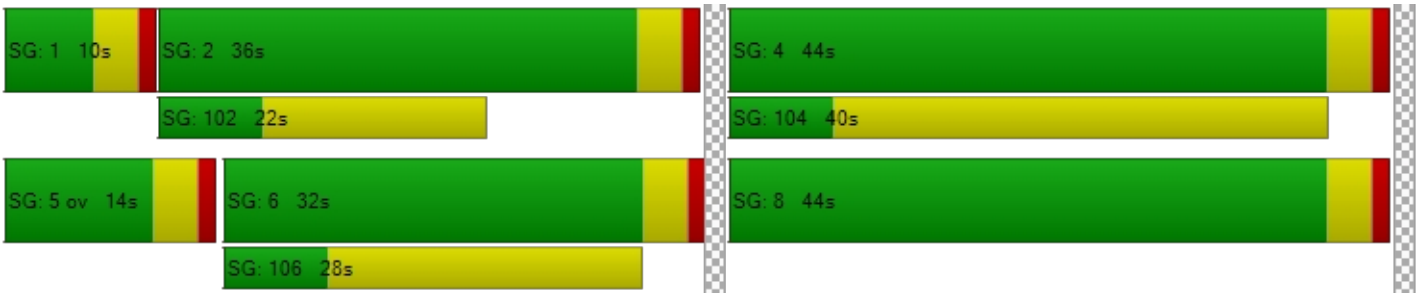
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Miles Traveled [mph] | 2.30 | 82.17 | 5.33 | 26.49 | 103.72 | 6.18 | 32.10 | 23.70 | 9.37 | 4.12 | 16.98 |
| Stops [stops/h] | 42.84 | 1169.54 | 45.23 | 504.42 | 950.43 | 34.64 | 441.05 | 378.49 | 499.78 | 75.05 | 304.46 |
| Fuel consumption [US gal/h] | 0.76 | 17.93 | 0.73 | 10.59 | 15.26 | 0.63 | 7.30 | 6.33 | 13.85 | 1.18 | 4.42 |
| CO [g/h] | 52.92 | 1253.58 | 51.28 | 740.18 | 1066.68 | 44.01 | 510.35 | 442.69 | 968.25 | 82.31 | 308.66 |
| NOx [g/h] | 10.30 | 243.90 | 9.98 | 144.01 | 207.54 | 8.56 | 99.30 | 86.13 | 188.39 | 16.01 | 60.05 |
| VOC [g/h] | 12.26 | 290.53 | 11.88 | 171.54 | 247.21 | 10.20 | 118.28 | 102.60 | 224.40 | 19.08 | 71.54 |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 11.0 | 11.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 34.67 | 34.67 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersectio | 0.000 | 4.076 | 2.546 | 2.832 |
| Crosswalk LOS | F | D | B | C |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 622 | 711 | 889 | 889 |
| d_b, Bicycle Delay [s] | 21.36 | 18.69 | 13.89 | 13.89 |
| l_b,int, Bicycle LOS Score for Intersection | 2.978 | 3.271 | 3.226 | 2.273 |
| Bicycle LOS | C | C | C | B |

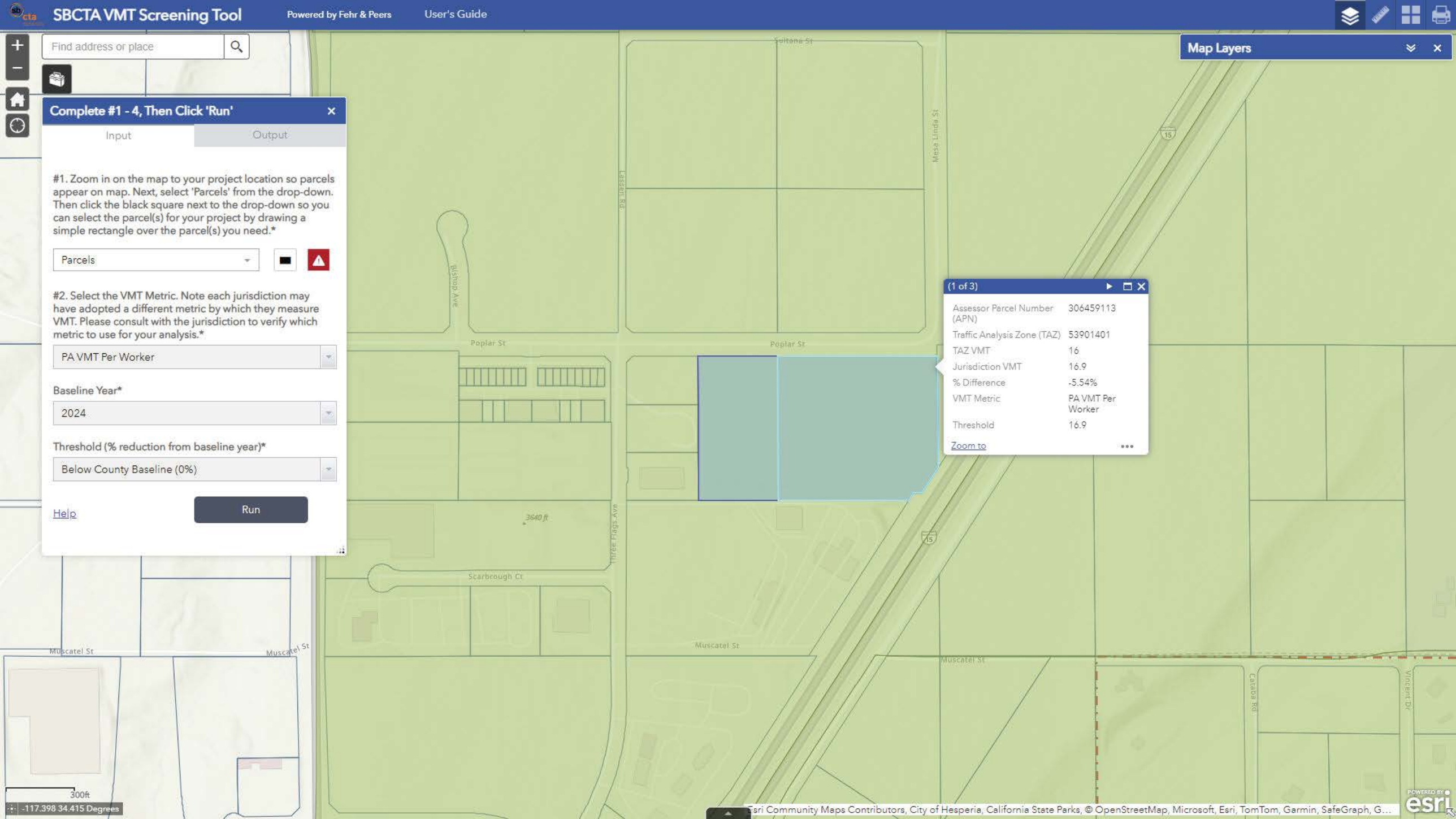
## Sequence

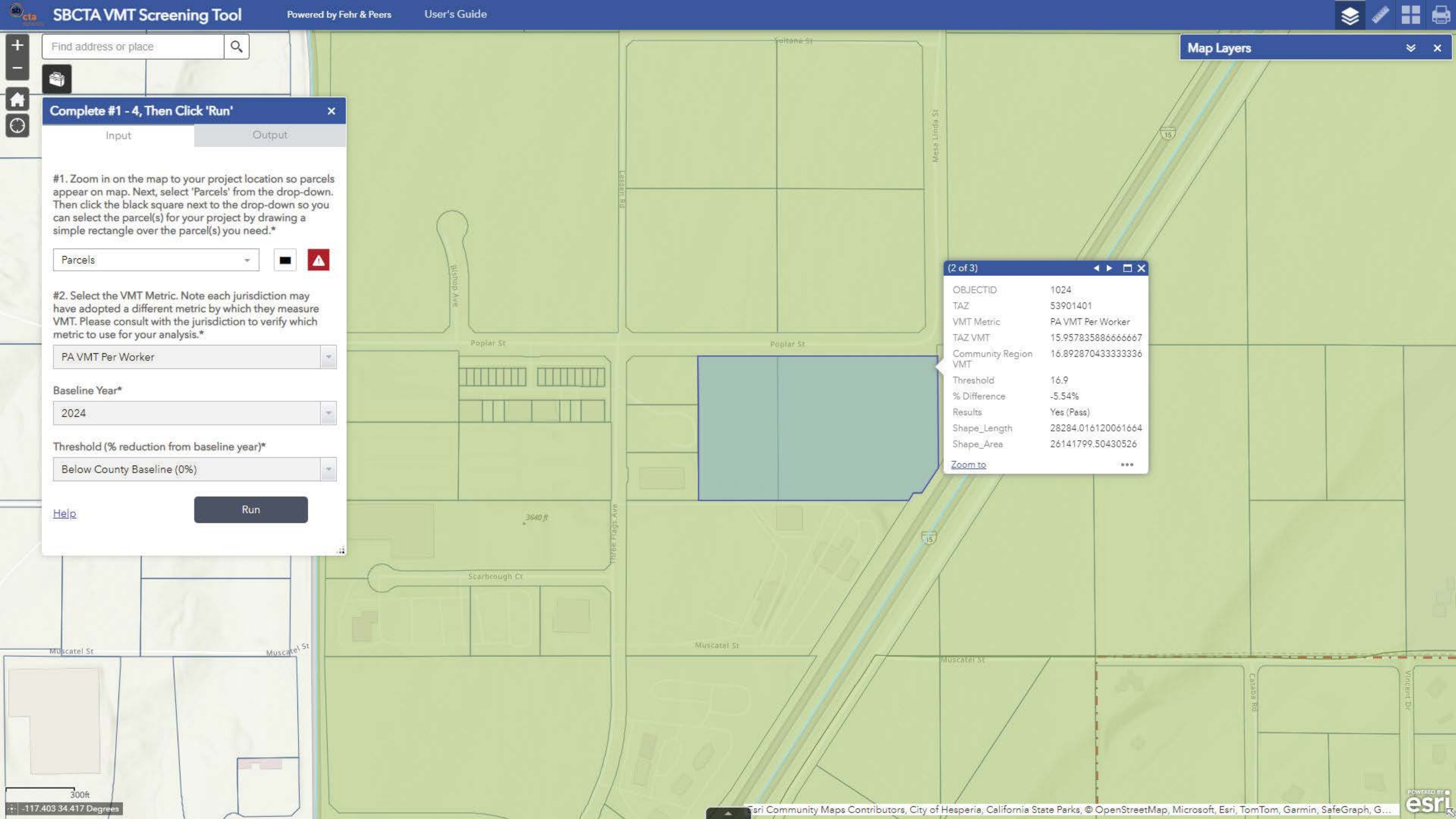
| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

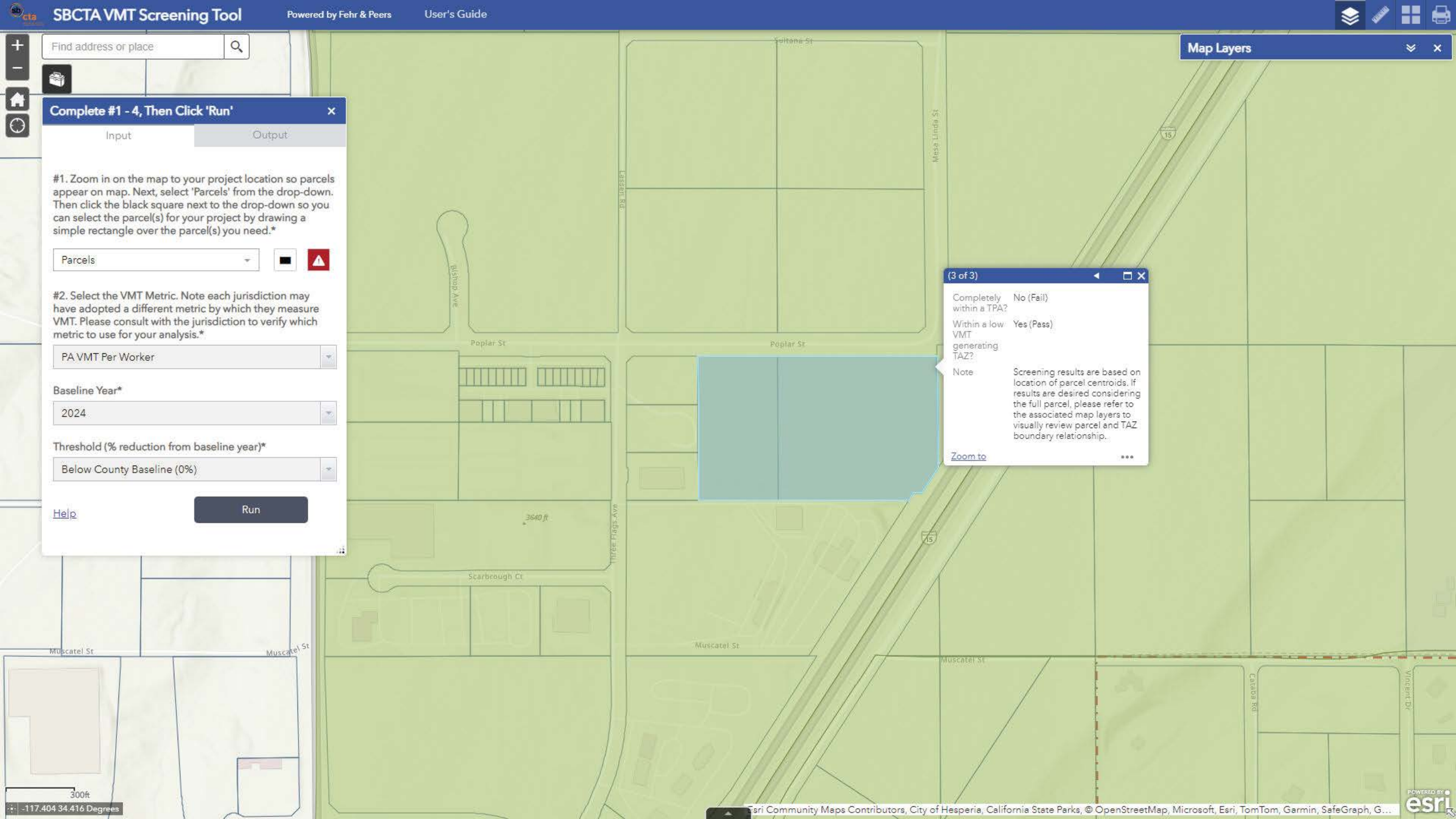


# Appendix L

SBCTA VMT Screening Tool Printouts


SBCTA VMT Screening Tool
Powered by Fehr & Peers
User's Guide
Find address or place
Map Layers
Complete #1 - 4, Then Click 'Run'
Input
Output
#1. Zoom in on the map to your project location so parcels appear on map. Next, select 'Parcels' from the drop-down. Then click the black square next to the drop-down so you can select the parcel(s) for your project by drawing a simple rectangle over the parcel(s) you need.*
Parcels
#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
Baseline Year*
2024
Threshold (% reduction from baseline year)*
Below County Baseline (0%)
Help
Run
(1 of 3)
Assessor Parcel Number (APN) 306459113
Traffic Analysis Zone (TAZ) 53901401
TAZ VMT 16
Jurisdiction VMT 16.9
% Difference -5.54%
VMT Metric PA VMT Per Worker
Threshold 16.9
Zoom to
Poplar St
Lassen Rd
Mesa Linda St
Bishop Ave
Three Flags Ave
Scarbrough Ct
Muscatel St
Catawba Rd
Vincent Dr
300ft
-117.398 34.415 Degrees
Esri Community Maps Contributors, City of Hesperia, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, G...


SBCTA VMT Screening Tool
Powered by Fehr & Peers
User's Guide
Find address or place
Map Layers
Complete #1 - 4, Then Click 'Run'
Input
Output
#1. Zoom in on the map to your project location so parcels appear on map. Next, select 'Parcels' from the drop-down. Then click the black square next to the drop-down so you can select the parcel(s) for your project by drawing a simple rectangle over the parcel(s) you need.*
Parcels
#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
Baseline Year*
2024
Threshold (% reduction from baseline year)*
Below County Baseline (0%)
Help
Run
(2 of 3)
OBJECTID 1024
TAZ 53901401
VMT Metric PA VMT Per Worker
TAZ VMT 15.957835886666667
Community Region VMT 16.892870433333336
Threshold 16.9
% Difference -5.54%
Results Yes (Pass)
Shape_Length 28284.016120061664
Shape_Area 26141799.50430526
Zoom to
Poplar St
Muscatel St
Scarbrough Ct
Three Flags Ave
Bishop Ave
Lassen Rd
Mesa Linda St
Sultana St
Catalpa Rd
Vincent Dr
3640 ft
300ft
-117.403 34.417 Degrees
Esri Community Maps Contributors, City of Hesperia, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, G...


SBCTA VMT Screening Tool
Powered by Fehr & Peers
User's Guide
Find address or place
Map Layers
Complete #1 - 4, Then Click 'Run'
Input
Output
#1. Zoom in on the map to your project location so parcels appear on map. Next, select 'Parcels' from the drop-down. Then click the black square next to the drop-down so you can select the parcel(s) for your project by drawing a simple rectangle over the parcel(s) you need.*
Parcels
#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
Baseline Year*
2024
Threshold (% reduction from baseline year)*
Below County Baseline (0%)
Help
Run
(3 of 3)
Completely within a TPA?
No (Fail)
Within a low VMT generating TAZ?
Yes (Pass)
Note
Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
Zoom to
Poplar St
Muscatel St
Scarbrough Ct
Bishop Ave
Three Flags Ave
Lassen Rd
Mesa Linda St
Sultana St
Catalpa Rd
Vincent Dr
3640 ft
300ft
-117.404 34.416 Degrees
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# APPENDIX J

# FUEL CONSUMPTION CALCULATIONS

# EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Air District
Region: Mojave Desert AQMD
Calendar Year: 2025
Vehicle Classification: EMFAC2007 Categories
Mojave Desert AQMD value: 10,205,812,340 VMT/Year
Project value: 850,912 VMT/Year

| VehClass | Fuel Type | County Fuel Consumption | | Project VMT | County VMT | Project Fuel Consumption (gal/yr) | | |
|---|---|---|---|---|---|---|---|---|
| | | 1000 gallons/year | gallons/year | | | Total | Gasoline | Diesel |
| LDA | GAS | 156953.2652 | 156953265.24 | 549859.33 | 4663682309 | 18,492 | 18,460 | 32 |
| | DSL | 274.2071047 | 274207.10 | | 11377556.94 | | | |
| LDT1 | GAS | 15297.40523 | 15297405.23 | 0.00 | 374515287.8 | 0 | 0 | 0 |
| | DSL | 3.326633511 | 3326.63 | | 77478.53469 | | | |
| LDT2 | GAS | 86639.16779 | 86639167.79 | 0.00 | 2110331175 | 0 | 0 | 0 |
| | DSL | 224.788539 | 224788.54 | | 7321595.099 | | | |
| MDV | GAS | 76894.14495 | 76894144.95 | 0.00 | 1498953696 | 0 | 0 | 0 |
| | DSL | 1060.953396 | 1060953.40 | | 24768976.4 | | | |
| LHDT1 | GAS | 12280.90556 | 12280905.56 | 0.00 | 164418166.7 | 0 | 0 | 0 |
| | DSL | 6827.398564 | 6827398.56 | | 139576529.3 | | | |
| LHDT2 | GAS | 1797.639863 | 1797639.86 | 0.00 | 21455268.41 | 0 | 0 | 0 |
| | DSL | 3636.414115 | 3636414.12 | | 61958495.03 | | | |
| MHDT | GAS | 4233.055818 | 4233055.82 | 111214.20 | 21984084.69 | 14,884 | 6,289 | 8,595 |
| | DSL | 5784.777642 | 5784777.64 | | 52868191.77 | | | |
| HHDT | GAS | 16.07087864 | 16070.88 | 189838.47 | 63216.19811 | 30,194 | 3 | 30,191 |
| | DSL | 156905.6265 | 156905626.53 | | 986546841.6 | | | |
| OBUS | GAS | 1099.070377 | 1099070.38 | 0.00 | 5562559.007 | 0 | 0 | 0 |
| | DSL | 217.0410357 | 217041.04 | | 1598995.227 | | | |
| UBUS | GAS | 455.5629729 | 455562.97 | 0.00 | 1725127.332 | 0 | 0 | 0 |
| | DSL | 10.32506105 | 10325.06 | | 81859.34788 | | | |
| MCY | GAS | 917.4237455 | 917423.75 | 0.00 | 37624821.66 | 0 | 0 | 0 |
| SBUS | GAS | 234.4767373 | 234476.74 | 0.00 | 2171784.089 | 0 | 0 | 0 |
| | DSL | 643.6030136 | 643603.01 | | 4889646.554 | | | |
| MH | GAS | 1801.220762 | 1801220.76 | 0.00 | 8582662.914 | 0 | 0 | 0 |
| | DSL | 351.1970356 | 351197.04 | | 3676014.562 | | | |
| | | | **Project Totals** | **850,912** | **10,205,812,340** | **63,570** | **24,752** | **38,818** |

Source: Calculated by UltraSystems with CalEEMod (2022.1.1.22) (CAPCOA, 2023).
Calculated by Ultrasystems with California Air Resources Board - EMission FACtor (EMFAC2021 v1.0.2) webtool
Per Capita Calculation is based on the estimated employee population of 244, which was provided by Cargo Solutions (see **Section 4.14**).
Gasoline 101 Diesel 159.0901639

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Air District
Region: Mojave Desert AQMD
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units:  miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

| Region | Calendar Year | Vehicle Category | Model Year | Speed | Fuel | Population | Total VMT | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|
| Mojave Desert AQMD | 2025 | HHDT | Aggregate | Aggregate | Gasoline | 2.68117145 | 63216.19811 | 16.07087864 |
| Mojave Desert AQMD | 2025 | HHDT | Aggregate | Aggregate | Diesel | 15403.35585 | 986546841.6 | 156905.6265 |
| Mojave Desert AQMD | 2025 | LDA | Aggregate | Aggregate | Gasoline | 322543.1529 | 4663682309 | 156953.2652 |
| Mojave Desert AQMD | 2025 | LDA | Aggregate | Aggregate | Diesel | 1011.812599 | 11377556.94 | 274.2071047 |
| Mojave Desert AQMD | 2025 | LDT1 | Aggregate | Aggregate | Gasoline | 31936.07103 | 374515287.8 | 15297.40523 |
| Mojave Desert AQMD | 2025 | LDT1 | Aggregate | Aggregate | Diesel | 16.97370517 | 77478.53469 | 3.326633511 |
| Mojave Desert AQMD | 2025 | LDT2 | Aggregate | Aggregate | Gasoline | 147429.5263 | 2110331175 | 86639.16779 |
| Mojave Desert AQMD | 2025 | LDT2 | Aggregate | Aggregate | Diesel | 479.5811975 | 7321595.099 | 224.788539 |
| Mojave Desert AQMD | 2025 | LHDT1 | Aggregate | Aggregate | Gasoline | 13494.00068 | 164418166.7 | 12280.90556 |
| Mojave Desert AQMD | 2025 | LHDT1 | Aggregate | Aggregate | Diesel | 11553.31946 | 139576529.3 | 6827.398564 |
| Mojave Desert AQMD | 2025 | LHDT2 | Aggregate | Aggregate | Gasoline | 1790.494317 | 21455268.41 | 1797.639863 |
| Mojave Desert AQMD | 2025 | LHDT2 | Aggregate | Aggregate | Diesel | 4986.27652 | 61958495.03 | 3636.414115 |
| Mojave Desert AQMD | 2025 | MCY | Aggregate | Aggregate | Gasoline | 18808.70406 | 37624821.66 | 917.4237455 |
| Mojave Desert AQMD | 2025 | MDV | Aggregate | Aggregate | Gasoline | 109975.8335 | 1498953696 | 76894.14495 |
| Mojave Desert AQMD | 2025 | MDV | Aggregate | Aggregate | Diesel | 1785.356452 | 24768976.4 | 1060.953396 |
| Mojave Desert AQMD | 2025 | MH | Aggregate | Aggregate | Gasoline | 3030.54672 | 8582662.914 | 1801.220762 |
| Mojave Desert AQMD | 2025 | MH | Aggregate | Aggregate | Diesel | 1305.683306 | 3676014.562 | 351.1970356 |
| Mojave Desert AQMD | 2025 | MHDT | Aggregate | Aggregate | Gasoline | 936.2525632 | 21984084.69 | 4233.055818 |
| Mojave Desert AQMD | 2025 | MHDT | Aggregate | Aggregate | Diesel | 2937.065163 | 52868191.77 | 5784.777642 |
| Mojave Desert AQMD | 2025 | OBUS | Aggregate | Aggregate | Gasoline | 286.4515488 | 5562559.007 | 1099.070377 |
| Mojave Desert AQMD | 2025 | OBUS | Aggregate | Aggregate | Diesel | 81.85506566 | 1598995.227 | 217.0410357 |
| Mojave Desert AQMD | 2025 | SBUS | Aggregate | Aggregate | Gasoline | 104.5435195 | 2171784.089 | 234.4767373 |
| Mojave Desert AQMD | 2025 | SBUS | Aggregate | Aggregate | Diesel | 643.2308631 | 4889646.554 | 643.6030136 |
| Mojave Desert AQMD | 2025 | UBUS | Aggregate | Aggregate | Gasoline | 55.28517502 | 1725127.332 | 455.5629729 |
| Mojave Desert AQMD | 2025 | UBUS | Aggregate | Aggregate | Diesel | 2.531039845 | 81859.34788 | 10.32506105 |
| | | | | | | | **10205812340** | **534559.0686** |