Sartin Yard Project

City of Calimesa, Riverside County, California

Cultural Resources Technical Report

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Report Title:	Cultural Resource Assessment for Sartin Yard Project
Submitted to:	City of Calimesa 908 Park Avenue Calimesa, California 92320
Prepared for:	Kevin Sartin, Property Owner 35589 Oleander Avenue Yucaipa, California 92399
USGS Quadrangle:	Sections 24, Township 2 South, Range 2 West of the San Public Land Survey System. On the USGS *El Casco, California* (7.5-minute) Quadrangle.

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1 INTRODUCTION

1.1 PROJECT LOCATION

This cultural resources assessment is for the Sartin Yard Project ("Project"), located in the City of Calimesa, Riverside County, California (Figure 1 – Regional Map). The proposed Project site is located north of Chandler Avenue and west of Calimesa Boulevard (Figure 2 - Site Vicinity Map and Figure 3 – Project Parcels Area Map). The proposed Project site is located in the El Casco, United States Geological Survey (USGS) 7.5-minute quadrangle and within the northeast quarter of Section 24, in Township 2 south and Range 2 west of the Public Land Survey System. The proposed Project site spans three Assessor Parcel Numbers (APNs): 413-210-022, -023, and 413-210-024 with a combined total of 8.85 acres (Figure 3 – Project Parcels Area Map). Latitude and longitude coordinates for the approximate middle of the site are 33.984081°, -117.050773°. The development footprint for the proposed Sartin Yard is approximately 2.4 acres and required off-site improvements in Chandler Avenue are approximately 0.16 acre (Figure 4 Project Development Footprint Map).

1.2 PROJECT DESCRIPTION

The Project proposes the development of an approximately 103,565-square-foot (SF), or 2.4-acre, open lot storage facility, as shown in Figure 4, Site Plan. The proposed Project includes a storage yard for light construction equipment and materials, recreational vehicles and boats, and trucks and trailers. To accommodate the storage of the trucks and trailers, the yard would include 42 truck parking stalls. Project development will include minor grading to develop the pad and will be improved with asphalt ("AC") paving, a perimeter fence/block wall, and a stormwater drainage/infiltration basin. The proposed grading cut and fill will balance and there is no need for import or export of soil. Grading for the Project would not exceed 5 feet for the stormwater basin and the general grading would be less than 2 feet.

Security lighting will consist of two 23-foot poles, located generally in the center of the site, with two LED lights on each pole that will be shielded downwards and angled away from adjacent properties. Security cameras will be installed on the perimeter block wall. The lights and cameras will be solar powered with a back-up battery source. The perimeter fencing/block wall includes 6-foot decorative block wall (concrete masonry until wall "CMU") and two automatic gates, tubular steel with steel mesh screens, at two driveways along Chandler Avenue. No buildings are proposed and no regularly scheduled employees at the storage yard. The hours of operation are from 7 am to 7 pm for the owner and any customers, to access the yard (pick up or drop off vehicles, equipment, etc.). The Project will improve the northern half width of Chandler Avenue along the Project's frontage, including new asphalt pavement and new curb and gutter and sidewalk. These improvements will require relocation of one existing power pole and removal of a total of

eight trees (existing eucalyptus and velvet ash trees). Two driveways/entrances will be constructed along Chandler Avenue. Landscape screening will be installed along all boundaries of the Project site between the property line and the 6-foot decorative wall surrounding the storage yard. The existing power pole will be relocated from the proposed driveway/path of travel to the landscaped screening area.

The proposed Project requires a Lot Line Adjustment (LLA) to create a 2.4-acre lot within APN 413-210-023, as the proposed Sartin Yard development site. The Lot Line Adjustment would include adjustments to adjacent parcel 413-210-024. The Project also requires a Lot Merger to combine APN: 413-210-022 & 24 into a single parcel to allow for access to be taken from Chandler Ave. No development is planned for parcel 413-210-024; any future development of this parcel would require the submission and approval of the appropriate application through the City of Calimesa Planning Department. The proposed Project requires a General Plan Amendment (GPA) from Office Park (OP) to Light Industrial (LI) and a Zone Change (ZC) from OP to Light Industrial (LI) to allow for the development of the storage facility. The proposed GPA and ZC would apply to all three existing parcels, two parcels after the Lot Merger.

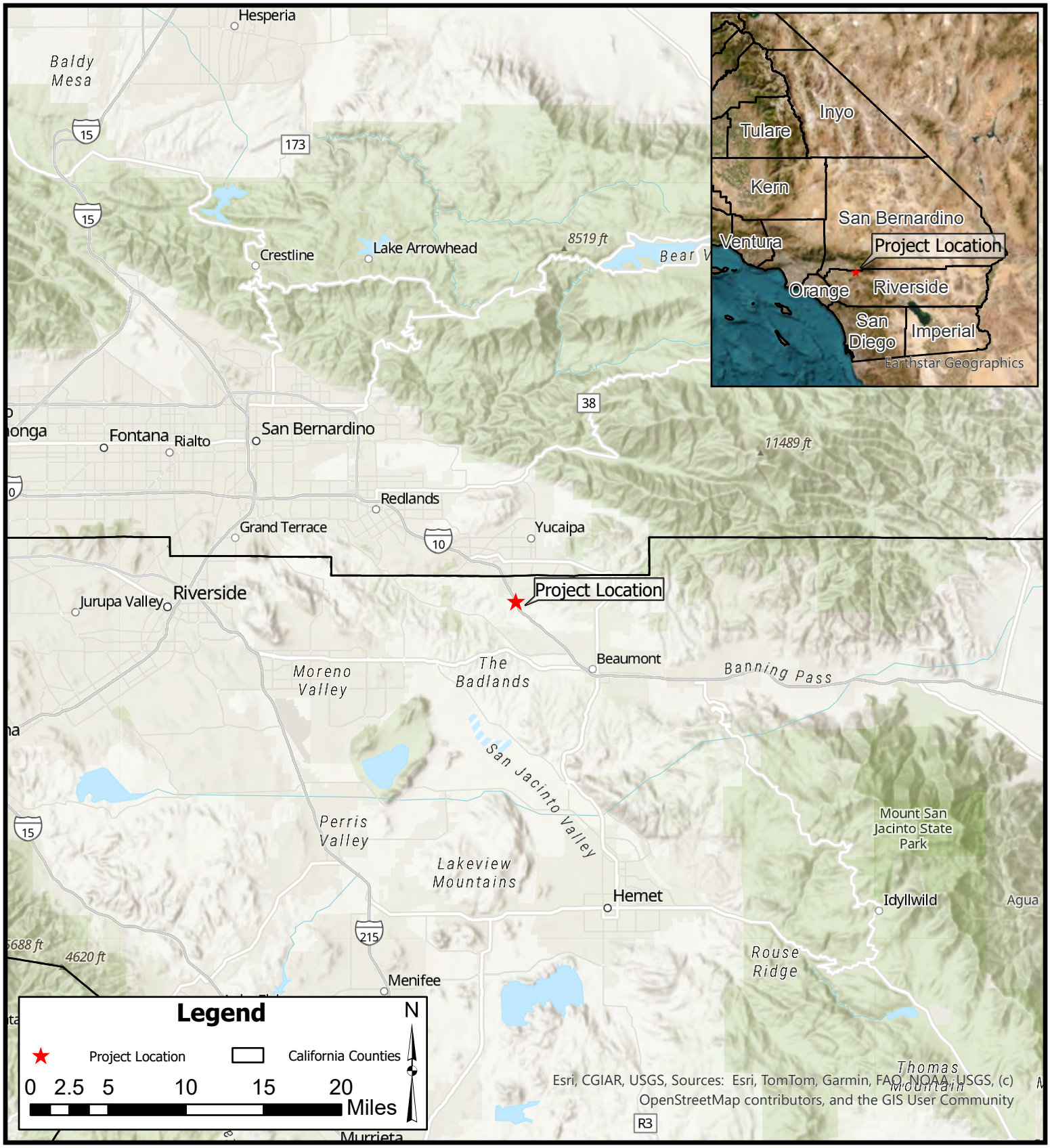
2 SETTING

2.1 ENVIRONMENTAL SETTING

The Project location is in western Riverside County, just south of the county line with San Bernardino County, generally situated in the Peninsular Ranges Geologic Province of southern California. The range, which lies in a northwest-to-southeast trend through the county, extends some 1,000 miles from the Raymond-Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California. The Project area is located to the east of the San Timoteo Canyon. The Project comprises graded and disturbed soils that elevate slightly to the property's north and rest at 2,317 feet above sea level (MSL).

Dense non-native vegetation dominates the Project area. Onsite vegetation is dominated by black and short-pod mustard (*Brassica nigra* and *Hirschfeldia incana*), non-native grasses (*Bromus rubens* and *Bromus diandrus*), and cheeseweed mallow (*Malva parviflora*) with other non-natives and natives intermixed including common stork's bill (*Erodium cicutarium*), Russian thistle (*Salsola tragus),* foxtail barley (*Hordeum murinum*), fiddleneck (*Amsinckia menziesii),* jimsonweed (*Daura wrightii*) and wild oat (*Avena fatua*). Trees, largely located around the periphery of the Project area include olive (*Olea eruopaea*), Peruvian pepper tree (*Schinus mole*), silver dollar eucalyptus (*Eucalyptus polyanthemos*), red gum eucalyptus (*Eucalyptus camaldulensis*) and coast live oak (*Quercus agrifolia*). Hillsides to the east south and west of the Project area have patches of native coastal sage scrub and chaparral vegetation, which was likely the native vegetation at the site prior development

disturbances. Animals expected to inhabit the Project area during prehistoric times include mammals such as rabbits, squirrels, gophers, mice, rats, deer, coyotes, and reptiles and amphibians. Natural drainages located within local canyons may have provided a water source, in addition to the San Timoteo Creek located west of the property.

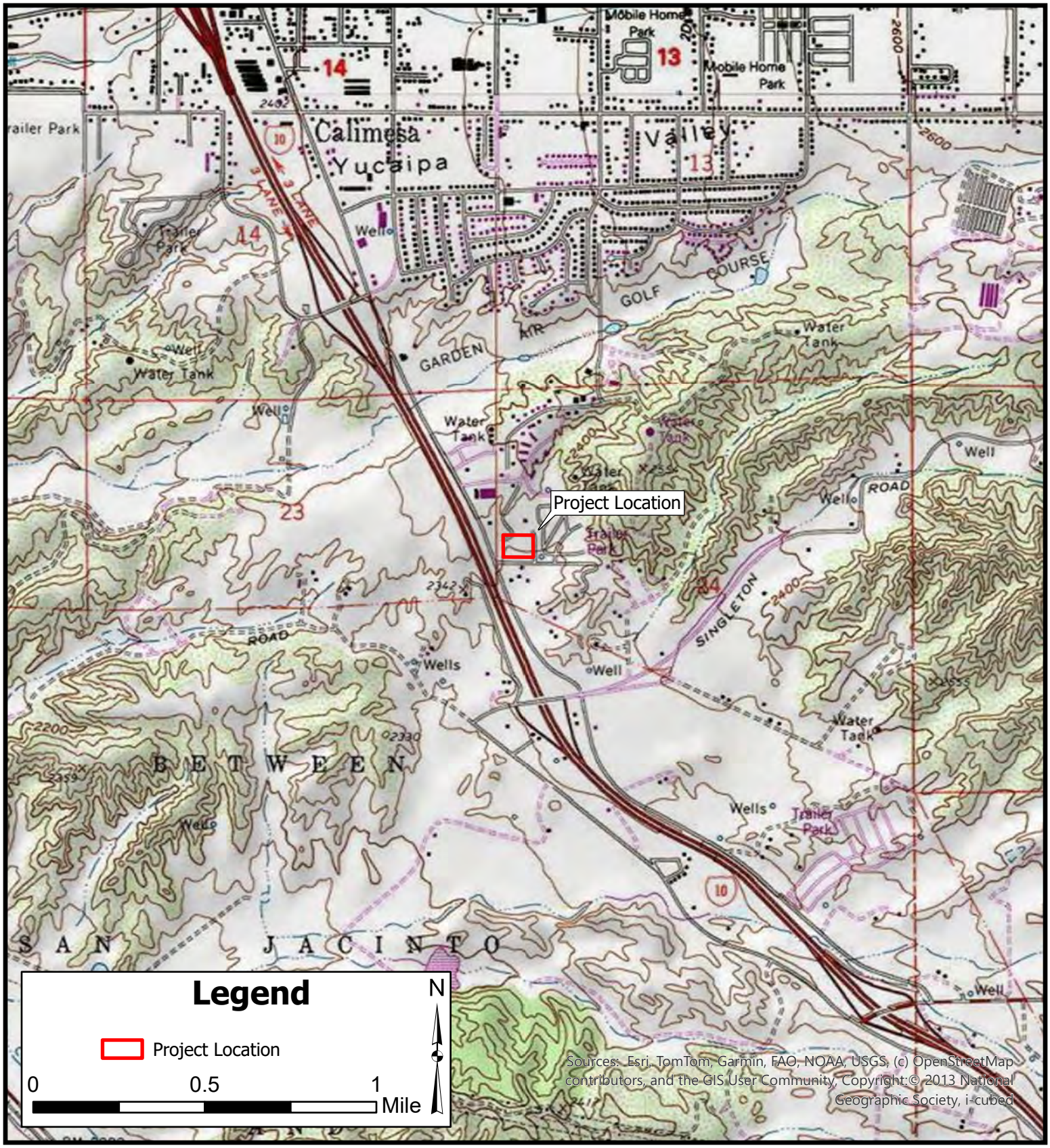


Sartin Yard Project

Regional Map

RVA

Figure 1



Sartin Yard Project

Site Vicinity Map

RVA

Figure 2



Sartin Yard Project

Project Parcels Area Map

RVA

Figure 3



Sartin Yard Project

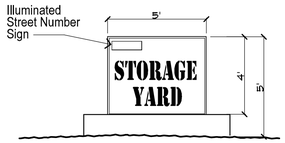
Project Development Footprint Map

RVA

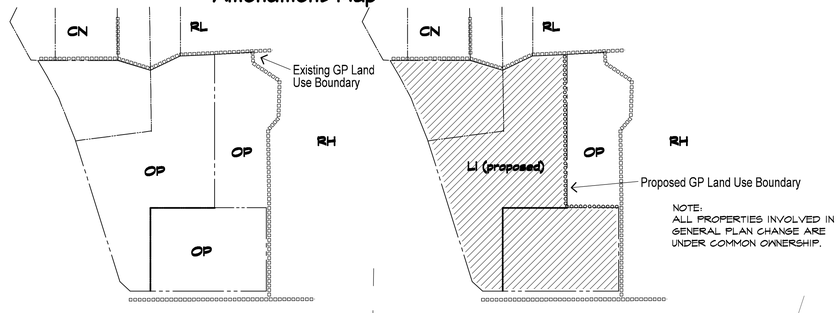
Figure 4

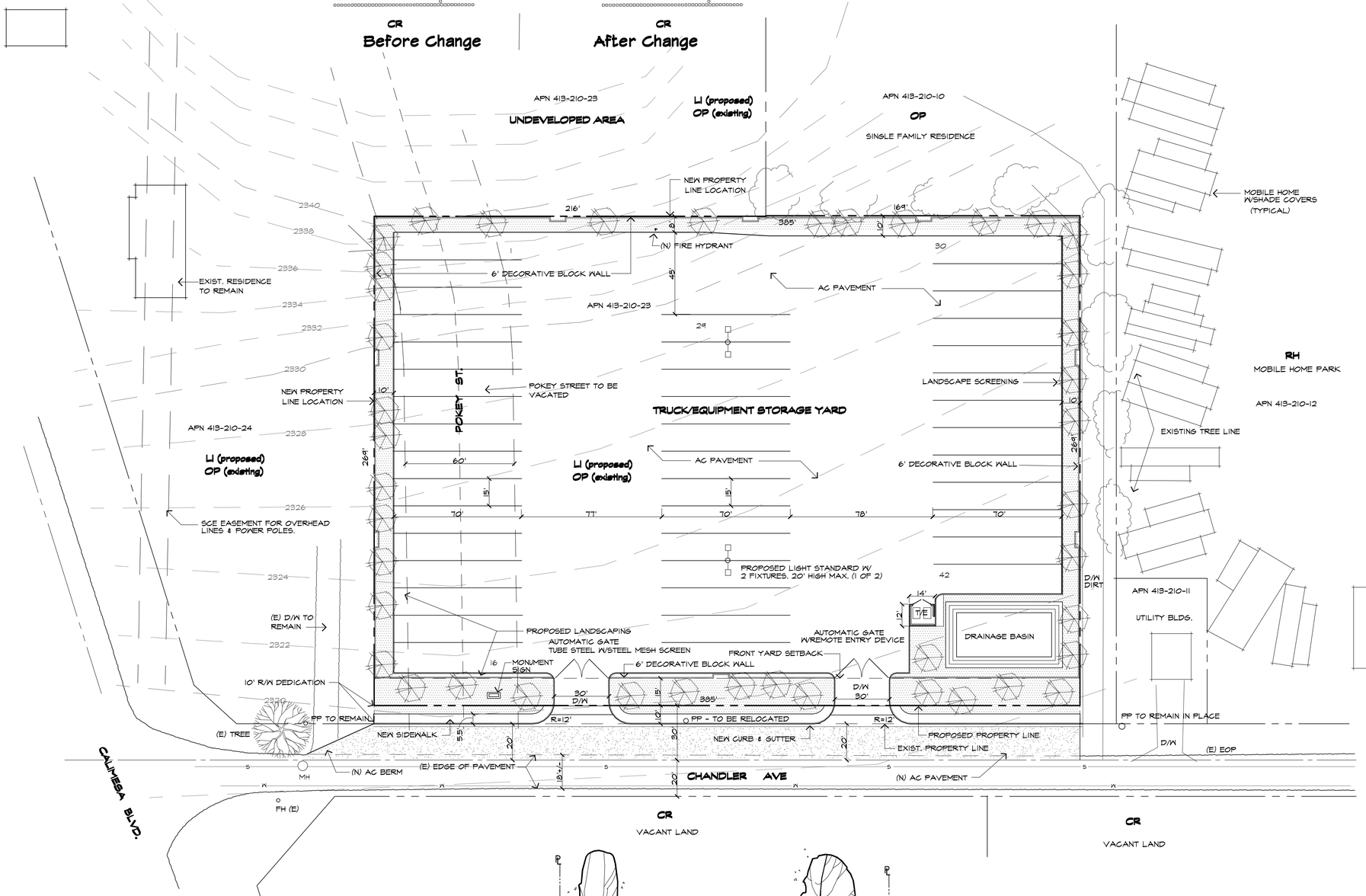
SITE PLAN

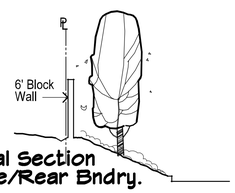
Equipment Storage Yard

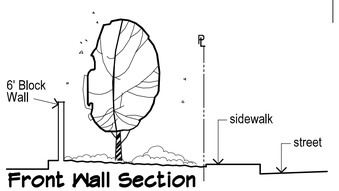


Monument Sign









Project Notes

APPLICANT/OWNER
Kevin Sartin
35589 Oleander Ave.
Yucaipa, CA 92399
909-335-1665

REPRESENTATIVE
Premium Land Development
543 W. County Line Rd.
Calimesa, CA 92320
909-335-1665

LEGAL DESCRIPTION
Parcels 2, 3 & 4 of Parcel Map No. 1074, as per plat recorded in Book 56 of Maps, Pages 32 & 33, Records of Riverside County.

ASSESSORS PARCEL NUMBER
413-210-22, 23, 24

SITE ADDRESS
Chandler Ave.

GENERAL PLAN DESIGNATION (existing)
Existing: OP (Office Park)
Proposed: LI (Light Industrial)

PROPOSED PROJECT
Establish a storage yard on 2.4 ac. for trucks, construction equipment, and tractor trailers.
Site improvements include a concrete driveway, AC paved yard area, and landscape buffer.
A Lot Line Adjustment is proposed to reduce APN 413-210-023 in size from 4.17 ac. to approximately 2.4 ac.
No. of storage/parking spaces: 42
Hours of Operation: Yard is accessible 24 hrs./day

STATISTICAL SUMMARY

Lot Area (Gross):	107,415 s.f.	2.46 ac.
Lot Area (Net):	103,565 s.f.	2.37 ac.

COVERAGE AREAS

Building Area (Existing):	-0- s.f.	
Building Area (Proposed):	-0- s.f.	
Total Building Area:	-0- s.f.	0.0%
Pavement Area:	87,350 s.f.	84.3%
Landscape/Pervious Area:	16,070 s.f.	15.6%

Note:

1. NO PROTECTED PLANTS OR REGULATED TREES EXIST ON SITE.
2. EXISTING RIGHT-OF-WAY EASEMENT ON SITE TO BE VACATED.
3. SITE IS NOT SUBJEXT TO FLOOD INNUNDATION OR FLOOD HAZARD ZONE
4. OFF-SITE STRUCTURES WITHIN 30 FEET OF PROPERTY ARE SHOWN ON PLAN.
5. THE AVERAGE SLOPE OF FEASIBLE ACCESS ROUTE AND FEASIBLE BUILDING SITE DOES NOT EXCEED 10%.
6. REFER TO PRELIMINARY GRADING PLAN FOR GRADING INFORMATION
7. NO TRUCK IDLING ON SITE OR OFF SITE QUEING IS PERMITTED.
8. TIMER SHALL BE INSTALLED TO REDUCE LIGHTING BY 50% AT 10:00 PM UNTIL DAWN OR 7:00 AM, WHICHEVER IS LATER.

SERVING UTILITIES:

Water
South Mesa Water Company
391 W. Ave. L
Calimesa, CA 92320
(909) 795-2401

Sewer
Yucaipa Valley Water District
12770 2nd St.
Yucaipa, CA 92399
(909) 797-5117

Electric
Southern California Edison
287 Tennessee St.
Redlands, CA 92373
(909) 307-6748

Gas
Southern California Gas Company
155 S. G St
San Bernardino, CA 92410
(909) 335-7915

Telephone
Frontier Communications
1500 Crafton Ave., Bldg. 125
Mentone, CA 92359
(909) 794-8293

CATV
Spectrum
1078 E. Hospitality Ln.
San Bernardino, Ca 92408
(909)

18.30.050 PERFORMANCE STANDARDS

All uses in the industrial zone districts shall comply with the following performance standards:

A. Noise. No use shall be permitted which exceeds the sound levels permitted by Chapter 8.15 CMC.

B. Electrical Disturbance. Devices which radiate radio frequency energy shall be so operated as not to cause interference with any activity carried on beyond the boundary line of the parcel upon which the device is located. The term "radio frequency energy" as used herein shall mean the electromagnetic energy at any frequency in the radio spectrum between 10 kilocycles and 3,000,000 megacycles.

C. Radioactivity. The use of radioactive materials shall be limited to measuring, gauging, and calibration devices. No use shall emit dangerous radioactivity. No cleaning of radioactive materials, equipment, or devices shall be permitted.

D. Fire and Explosion Hazards. All activities involving flammable or explosive materials and all storage of such materials shall be provided with adequate safety devices against the hazard of fire and explosion. Adequate firefighting and fire suppression equipment shall be available within response times defined by the fire department.

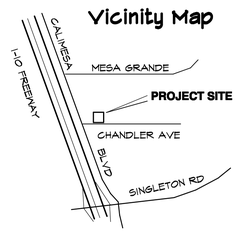
E. Vibration. Every use shall be so operated that ground vibration inherently and recurrently generated is not perceptible without instruments by a reasonable person standing on any boundary line of the lot on which the use is located.

F. Smoke, Dust, Fumes, and Other Particulate Emissions. Said emission levels shall comply with the standards of the South Coast Air Quality Management District.

G. Odors. Odors shall not be in such quantities as to be offensive to a reasonable person standing anywhere outside the boundaries of the parcel from which said odors emanate.

H. Emission of Heat and Glare. Every use shall be so operated that it does not emit heat or glare in such quantity or degree as to be readily detectable by a reasonable person standing beyond any boundary line of the parcel from which said heat or glare emanates.

OPERATION NOTES:
1. SITE SECURITY TO BE PROVIDED THROUGH A 24-HOUR SOLAR POWEREDSURVEILLANCE CAMERA SYSTEM
2. SIGNS SHALL BE POSTED INDICATING ON-SITE IDLING OF TRUCKS OR OFF-SITE QUEING IS PERMITTED.



SCALE 1"=30'

REVISIONS	
SITE PLAN MODIFICATIONS	12-13-23
REDLINE COMMENTS	11-18-24
REDLINE COMMENTS	8-13-25

West Coast ENTITLEMENT
543 W. County Line Rd
Calimesa, CA 92320

SITE PLAN
CONDITIONAL USE PERMIT
TRUCK/EQUIPMENT STORAGE YARD
CHANDLER AVE. CALIMESA

date drawn:	drawn by:	scale:	file no.
JUNE 7, 2023	B. ORR	1" = 30'	

SHEET 1 OF 2 SHEETS

2.2 HISTORICAL SETTING

Riverside County represents three general cultural periods: Paleo Indian, Archaic Period Milling Stone Horizon, and Late Prehistoric Takic groups. The Late Prehistoric component was primarily represented by the Cahuilla, Gabrielino, and Luiseño Indians; however, the Project area also falls within an area occupied by the Serrano. The Cultural Resources Study for the Summerwind Project (Appendix A) provides an extensive historic, prehistoric, and tribal history context for the Project area and vicinity.

2.2.1 History of the City of Calimesa

The Project is located within the City of Calimesa near the boundary with the City of Yucaipa and the County of San Bernardino. Historically, the name of Calimesa comes from the prefix cal-, chosen after the state's name, and the term mesa was added due to the setting of the nearby flat-topped hills (Gudde and Bright 2010). The City of Calimesa began as small rural town comprised mostly of single-family homes and ranches. (City of Calimesa 2014)

When State Route 99 (now Interstate 10) was completed in the 1920s, Calimesa began to grow. In 1929, Calimesa was distinctly created at the request of businessman Harry Sheppard. Sheppard had sought to establish a post office close to his business near the intersection of County Line Road and State Route 99 because he was unsatisfied with the service of the post office that had been responsible for delivering his mail. The request was granted in 1929, and through a contest organized by the Yucaipa Chamber of Commerce. Calimesa was incorporated in 1990. (City of Calimesa 2014)

3 APPLICABLE REGULATIONS

This cultural resources study for the Sartin Yard Project followed the appropriate local and state protocols and procedures for this type of study. The significance of identified cultural resources was evaluated using the statutory requirements of CEQA and subsequent legislation (Section 15064.5), as well as the guidelines for the City of Calimesa. The specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO 1995).

3.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

According to CEQA, Section 15064.5(a), the term "historical resource" includes the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC SS5024.1, Title 14, Section 4852), including the following:
    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) 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 values; or
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

e) The fact that a resource is not listed in, or determined eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1[g] of the PRC), does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

According to CEQA, Section 15064.5(b), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect upon the environment. CEQA defines a substantial adverse change as:

1) Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.
2) The significance of a historical resource is materially impaired when a project:
    a) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR; or,
    b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or,
    c) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for the purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects upon archaeological sites and contains the following additional provisions regarding archaeological sites:

1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is a historical resource, as defined in Subsection (a).
2) If a lead agency determines that the archaeological site is a historical resource, it shall refer to the provisions of Section 21084.1 of the PRC,

Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the PRC do not apply.

3) If an archaeological site does not meet the criteria defined in Subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of Section
4) 21083.2. The time and cost limitations described in PRC Section 21083.2(c) to
(f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
5) If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project upon those resources shall not be considered a significant effect upon the environment. It shall be sufficient that both the resource and the effect upon it are noted in the Initial Study or Environmental Impact Report, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, Subsection (d) provides:

> (d) When an Initial Study identifies the existence, or probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC) as provided in PRC SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:
>
> - The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
> - The requirements of CEQA and the Coastal Act.

4 METHODOLOGY AND RESULTS

The archaeological assessment conducted for the Sartin Yard Project consisted of a Phase I pedestrian survey and site inventory for the property by qualified archaeologists and an institutional records search.

4.1 Field Methodology

On March 8, 2024, RVA staff conducted a phase 1 archaeological survey of the Project development footprint, which includes the Sartin Yard development footprint and the off-site improvements within Chandler Avenue. The pedestrian survey was conducted at 5-meter interval transects running east- west.

4.2 Results of the Field Survey

During the survey, ground visibility was characterized as poor due primarily to dense vegetation. Considering the ongoing sensitive nature of known cultural resources from a review of the Oak Valley Town Center's (OVTC) Cultural Resource Addendum to the Summerwind Ranch at Oak Valley EIR document, Cultural Resources Study for the Summerwind Project (Appendix A), and the Summerwind Ranch at Oak Valley 2005 DEIR RVA staff performed the pedestrian survey in tighter transect intervals than traditionally used. The Sartin Yard Project transects were performed at 5-meter intervals and covered the entirety of the proposed Project development footprint. Ground visibility throughout the proposed Project area varied between 5% and 100%. Most of the Project area was 5% visible and 100% visible in areas where grading had occurred. The pedestrian survey results were negative for cultural resources.

Archival research did not reveal any geotechnical or geoarchaeological studies for the Project site to deduce the extent of previous ground disturbance. According to the National US Geologic Map Database (USGS) maps of the Project area, the northern portion of the Project area is underlain by Old Alluvial-Fan (Qof2) deposits of the Pleistocene era and the southern portion of the Project area is underlain by Young Alluvial-Fan (Qya5) deposits of the upper Holocene era. Young Alluvial-Fan (Qya5) deposits of the upper Holocene era are considered to be sensitive for the potential to contain buried archaeological resources.

Based on field observations, only a portion of the site adjacent to Chandler Avenue appears to be currently graded while the remainder of the site retains gently undulating terrain and scattered vegetation. Historically the site appeared to be used for agricultural purposes and had undergone discing for weed removal.



Photo 1: Site overview from Project development footprint's southern border facing north.



Photo 2: Site overview from Project development footprint's northern border facing south.



Photo 3: Site overview from Project development footprint's northwest corner facing east.



Photo 4: Site overview from Project development footprint's eastern border facing west.

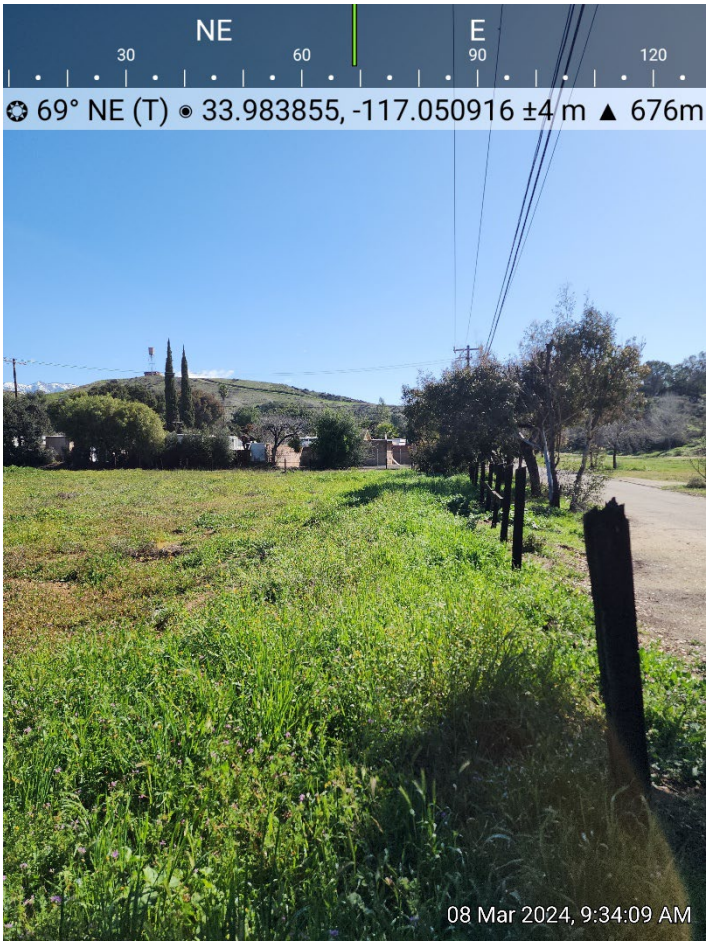


Photo 5: Site overview from Project development footprint's southern border facing east.

4.3 Archaeological Records Search and Discussion with the City of Calimesa

The records search conducted by the Eastern Information Center (EIC) at University of California Riverside (UCR) was reviewed for an area of one mile surrounding the Project site to determine the presence of any previously recorded sites. RVA staff, with the assistance of the City of Calimesa, reviewed the nearby OVTC and Summerwind project documents to better assess the potentiality of cultural resources. The OVTC project is a mixed-use development project comprising 6,405.5 acres and approximately 0.5 miles southwest of the Sartin Yard Project across the I-10 freeway to the west. The Summerwind Ranch at Oak Valley project is a residential and golf development project located approximately 0.5 miles west of the Sartin Yard Project across the I-10 freeway.

Discussion with the City of Calimesa on the recent history of the Project area determined that the applicant for the Sartin Yard Project conducted unpermitted grading at the site. A work stoppage was sent to the applicant by the City dated January 9th, 2023. Because the work was unpermitted and no plans were submitted to the City, the depth of disturbance is undetermined.

4.4 Review of Historic Aerial and Topographic Imagery

A review of historical aerial imagery and topographic imagery shows the history of use of the Project area and occupation dating back to 1953 and 1959. The 1958 (Figure 6) aerial imagery shows a graded and manicured field for agriculture use within the Project area. There is a potential residential or utility structure to the west of the Project area and a series of structures that exist in the modern day as residential and assorted ranch buildings. There is no evidence that the property has gone through a significant shift in usage since 1959. The topographic imagery (Figure 7) shows State Route 99 (now Interstate 10) appears between the 1901 and 1943 topography maps, which is consistent with Section 2.1.1 above, which indicates it was completed in the 1920s. Topographic imagery from 1953 and 1967 (Figure 8) shows additional development in the area, including structures and roadways.



Aerial Imagery 1959



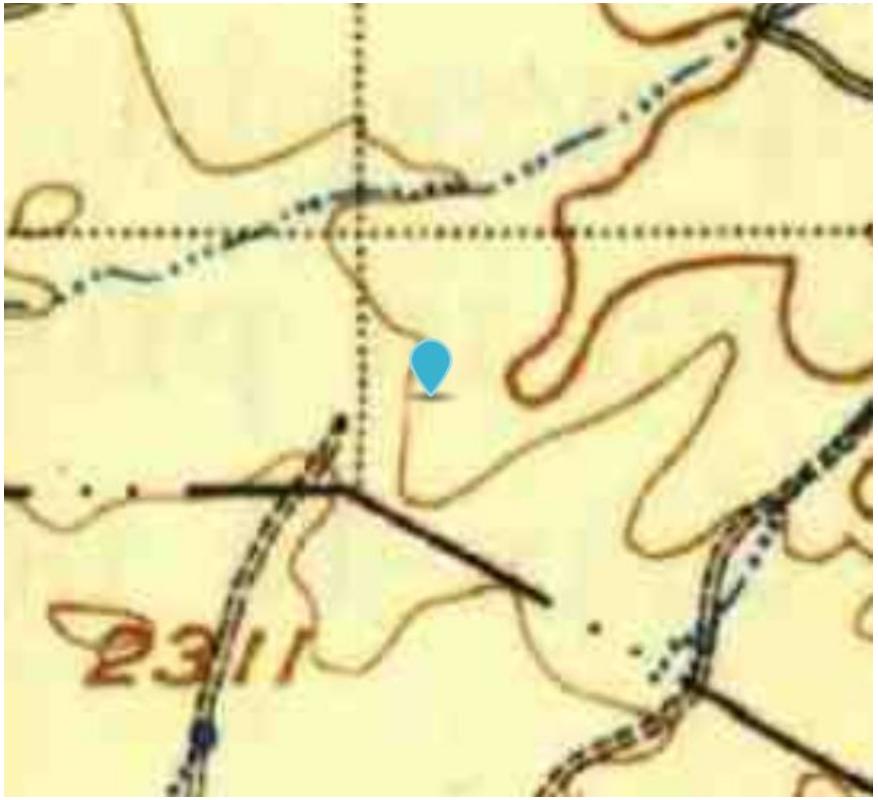
Aerial Imagery 1968

RVA

Historic Aerial Imagery

Sartin Yard Project

Figure 6



Topography Imagery 1901



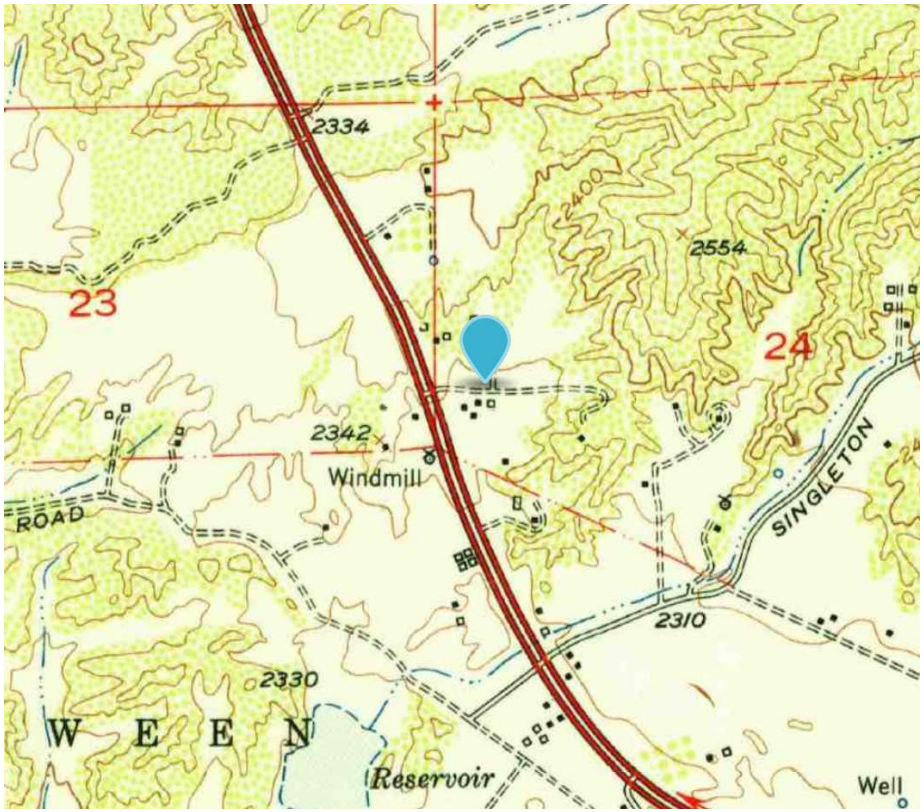
Topography Imagery 1943

RVA

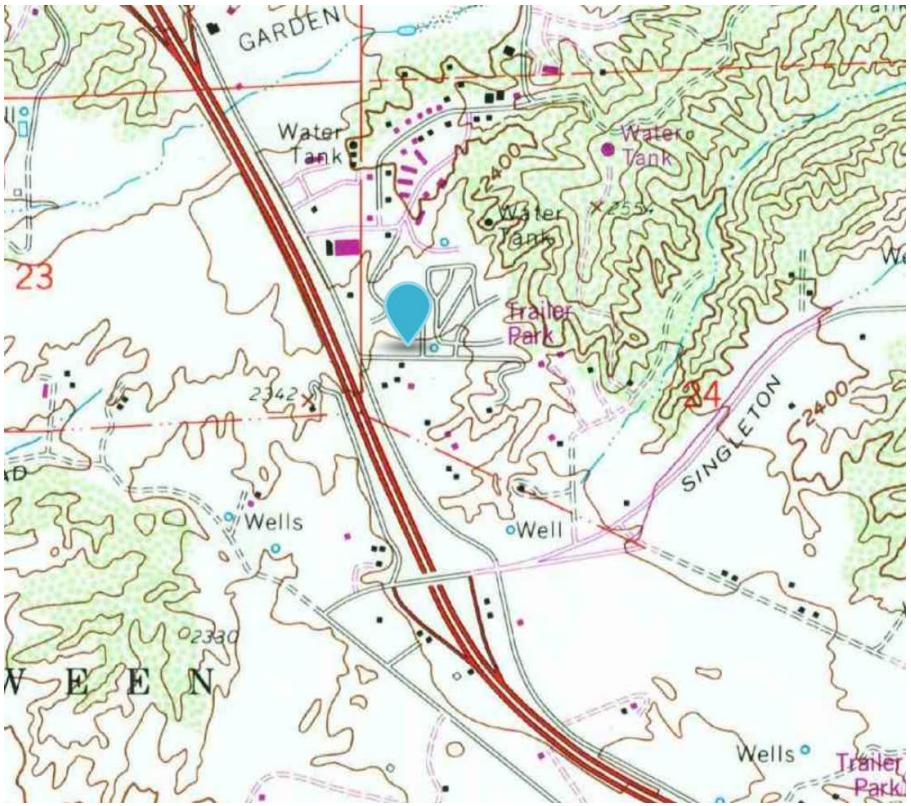
Historic Topo Imagery

Sartin Yard Project

Figure 7



Topography Imagery 1953



Topography Imagery 1967

RVA

Historic Topo Imagery

Sartin Yard Project

Figure 8

4.5 Report of Findings

On March 19th, 2024, an archaeological record search was conducted at the Eastern Information Center (EIC) at the University of California Riverside (UCR).

Table 1: Sites Recorded Within 1-mile of Sartin Yard Project

SITE(S)	DESCRIPTION
P-33-004115	Three historic foundations and a filled-in well and the well Platform. Approximately 0.59 miles east of the Project area.
P-33-013716	One historic side-gabled home in an agricultural setting. Approximately 0.39 miles to the west of the Project area.
P-33-013717	One historic wood-framed American/Contemporary-style house single-family property. Approximately 0.98 miles southeast of the Project area.
P-33-013719	One historic wood-framed Ranch-style single-family house. Approximately 0.31 miles southwest of the Project area.
P-33-013721	One historic California Ranch-style single-family residence. Approximately 0.31 miles southeast of the Project area.
P-33-013724	One pre-historic granitic pestle with one ground end and possible grinding wear on the other end. Approximately 0.32 miles SSW of the Project area.
P-33-014867	Two historic ranch-style residences. Approximately 0.32 miles SSW of the Project.

Resources Recorded adjacent to the Sartin Yard Project

- **Site P-33-004115** is a site comprising three foundations, a corrugated metal scatter, a concrete well platform, and a water well surrounded by corrugated metal. Foundations 1 and 2 are rock and cinderblock outlined to be approximately 20' x 20' and littered with the remains of a gas stove and toilet. The area is approximately 550' x 250'. When recorded in 1990 by Robin Laska and Mark Swanson of Research Associates, the site had been partially bulldozed for road grading, soil testing, and borrowing.
- **Site P-33-013716** is a residential property described as a mass-planned side-gabled home with a wood frame. The roof is clad in modern ceramic tiles. The property has a patio and covered porch. The residence is situated on a south-western-facing slope. Nearby ancillary buildings and features include a shed, a series of ranch buildings, and building foundation slabs 350' to the west. The ranch-associated buildings are a water tank shed, a possible work shed, a chicken coop, a hay barn, a barn, and sheds. At the time of recording, 2004, by LSA Associates, the site was still standing.
- **Site P-33-013717** is a wood-framed American International/Contemporary home. The roof is flat with composition roofing. The walls are stucco, and the windows are metal framed. The building has a concrete slab foundation and an additional carport. The

residence is situated on a level plane. There is a hay barn on the adjacent parcel that may be associated. The structure was recorded by Riordan Goodwin of LSA Associates in 2004.

- **Site P-33-013719** is a wood-framed Ranch-style house with a very low-pitched roof and multiple additions. It has plywood siding and metal-framed windows. Riordan Goodwin of LSA Associates recorded the structure in 2004.
- **Site P-33-013721** is a 1950s home with stucco walls, a moderately pitched roof, and wood-framed windows. The building has a double-door entrance that opens to a room with several window openings. The foundation is a concrete slab with an apron and a brick chimney. The detached garage has horizontal board siding and a connecting roof. Riordan Goodwin of LSA Associates recorded the structure in 2004.
- **Site P-33-013724** is a pre-historic single granitic pestle with one ground end and possible grinding wear on the other end. The recording of the resource provides no further information. Recorded by Nat Lawson of LSA Associates in 2004.
- **Site P-33-014867** is two residences and related buildings adjacent to Interstate 10. The two properties are nearly identical wood-framed California Ranch-style homes covered in stucco with medium-pitched gabled roofs and shingles. A wooden ramp provides access to the westerly home. The detached garage has horizontal board siding and a connecting roof. Riordan Goodwin of LSA Associates recorded the structure in 2004.

Previous Studies Recorded within the Sartin Yard Project Vicinity

- **RI-010195** is a previous study conducted by Archaeological Resource Management Corp. in 1981. The study was an overview survey, and as described by The Digital Archaeological Record's archives covered a survey area from Blythe, CA to the east, Ontario to the northwest, and into San Diego County. The study did not specifically cover the Project area.
- **RI-04145** is a previous study conducted by Chamber's Group, INC. in 1998. The study was an overview study for a Pac-Bell telecommunications project and covered a general area defined by The Digital Archaeological Record's archives as west of Lake Havasu City and west to Montclair, CA, as north as Edwards Air Force base, and south into Moreno Valley. The study did not specifically cover the Project area.
- **RI-08010** is a previous study conducted for the General Plan Amendment-04-002, Zone Change 04-002 Plan Amendment SP-04-002 for the Summerwind Ranch at Oak Valley. The study was conducted by LSA and Associates in 2004. The study was conducted to support the CEQA document for a project located directly to the west and northwest of Sartin Yard Project. The study identifies 16 cultural resources within the study's project area. These resources mainly consisted of historic ranch structures. The Sartin Yard Project area does not overlap with the study's project area.

Table 2: Previous Studies Conducted Within 1-mile of the Project

REPORT NO.	Year	Author(s)	Title	Affiliation
RI-01095	1981	Adella Schroth and Marie Cottrell	Archaeological Assessment of Singleton Ranch, Near Calimesa Riverside County, California	Archaeological Resource Management Corp., Garden Grove, CA
RI-02494	1990	Laska, Robin E. And Mark T. Swanson	Cultural resource survey of Country Club Ridge, of 135 acres Located near Calimesa, Riverside County, California.	Authors
RI-02981	1990	Christopher Drover	Archaeological Assessment of General plan Amendment 280, Riverside County, California.	Authors
RI-03720	1989	De Munck, Victor C. and Mark Swanson	An archaeological assessment of An 82-acre tract of land referred To as the country club estates in The City of Calimesa, riverside County, California	Research Associates
RI-04145	1998	Mason, Roger, Philippe Lapin, and Wayne H. Bonner	Cultural resources records Search and survey report for a Pacific Bell Mobile services Telecommunications facility: cm206-01, City of Calimesa, California	Chamber's Group, INC.
RI-05244	2001	Laurie White	Cultural resource assessment For sprint pcs facility rv54xc526a (church house), City of Calimesa, Riverside County, ca	Michael Brandman And Associates
RI-05247	2005	Cotterman, Cary, Evelyn Chandler, Koral Ahmet, and Roger Mason	Cultural resources survey of the Yucaipa Valley Water District Cassoulis Reservoir project area, Calimesa, Riverside	Ecorp Consulting. INC.

REPORT NO.	Year	Author(s)	Title	Affiliation
			County, ca	
RI-07740	2007	Michael Hogan	Letter Report: Archaeological Monitoring program Perisits Farms; tentative tract nos. 26925, 30386, and 30387; City of Calimesa, Riverside County, California	CRM Tech
RI-08010	2004	Nat Lawson, Riordan Goodwin, Curt Duke, and Judith Marvin	Cultural Resource Assessment Oak Valley Specific Plan1Amendment City of Calimesa Riverside County, California	LSA and Associates
RI-08049	2008	Wayne Bonner and Marnie Aislin-Kay	Letter Report: Cultural Resources Records Search and Site Visit Results for Royal Street Communications California, LLC Candidate LA3221A (Crown Collocation - 879944 Church House), 9530 Calimesa Boulevard, Calimesa, Riverside, California.	Michael Bradman Associates, Irvine, California

Table 3: Previous Studies Conducted Within the Sartin Yard Project Vicinity

REPORT NO.	Year	Author(s)	Title	Affiliation
RI-01095	1981	Adella Schroth and Marie Cottrell	Archaeological Assessment of Singleton Ranch, Near Calimesa Riverside County, California	Archaeological Resource Management Corp., Garden Grove, CA
RI-04145	1998	Mason, Roger, Philippe Lapin, and Wayne h. Bonner	Cultural resources records Search and survey report for a Pacific Bell Mobile services Telecommunications facility: cm206-01, City of Calimesa, California	Chamber's Group, Inc.
RI-08010	2004	Nat Lawson, Riordan Goodwin, Curt Duke, and Judith Marvin	Cultural Resource Assessment Oak Valley Specific Plan1Amendment City of Calimesa Riverside County, California	LSA and Associates

5 TRIBAL INFORMATION REQUESTS

The results of the NAHC's Sacred Land File search was positive for tribally associated resources. On Thursday, March 28th, 2024 RVA staff sent out a request for tribal information to supplement the cultural resource assessment to all associated tribes provided by the NAHC (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Yuhaaviatam of San Manuel Nation, Cahuilla Band of Indians, Los Coyotes Band of Cahuilla, and Cupeño Indians, Morongo Band of Mission Indians, Quechan Tribe of the Fort Yuma Reservation, Ramona Band of Cahuilla, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Torres-Martinez Desert Cahuilla Indians, and Serrano Nation of Mission Indians) see below.

5.1 TRIBAL RESPONSES

- On Friday, March 29th, 2024, Yuhaaviatam of San Manuel Nation's Eunice Ambriz contacted RVA to express that the Project area was located within a sensitive space and further consultation would be continued during the AB52 notification process between the lead agency and their department.
- On Tuesday, April 2nd, 2024, Agua Caliente Band of Cahuilla Indians' representative Claritsa Duarte forwarded a document outlining the Project area's sensitivity, mitigation measures they'd like incorporated, and requests for the lead agency.
    - A cultural resources inventory of the Project area by a qualified archaeologist prior to any development activities in this area.
    - Copies of any cultural resource documentation (report and site records) generated in connection with this Project.
    - A copy of the records search with associated survey reports and site records from the information center.
    - The presence of an approved Cultural Resource Monitor(s) during any ground- disturbing activities (including archaeological testing and surveys).
    - Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt, and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer.
    - The presence of an archaeologist that meets the Secretary of Interior's standards during any ground-disturbing activities.
    - The Project is located in a highly sensitive area.

Therefore, based on the responses from the tribes, the Project area is considered within a region known to local tribal governments to be sensitive for tribally affiliated cultural resources.

6 MANAGEMENT RECOMMENDATIONS

6.1 IMPACT ANALYSIS AND RECOMMENDATIONS

The Project development footprint is not anticipated to support unknown cultural resources based on modern development of the site in the 1950s for residential and agricultural uses, ongoing weed abatement of the site, and recent undocumented grading activities. The intensive pedestrian survey of the Project development footprint was negative for cultural resources on the surface and the record search came up negative for known cultural resources.

The one known cultural resource of prehistoric origin and tribal association is a single isolated mano tool located 0.32 miles southwest of the Project site. The historical resources located within 1 mile of the project area are not to be affected by the proposed Project's development.

However, the NAHC's Sacred Land File search did come up positive for tribally associated resources, and Yuhaaviatam of San Manuel Nation expressed concern for what it considered incredibly sensitive nature of the proposed Project area.

Archival research did not reveal any geotechnical or geoarchaeological studies for the Project site to deduce the extent of previous ground disturbance. According to the National US Geologic Map Database (USGS) maps of the Project area, the northern portion of the Project area is underlain by Old Alluvial-Fan (Qof2) deposits of the Pleistocene era and the southern portion of the Project area is underlain by Young Alluvial-Fan (Qya5) deposits of the upper Holocene era. Young Alluvial-Fan (Qya5) deposits of the upper Holocene era are considered to be sensitive for the potential to contain buried archaeological resources.

Based on field observations, only a portion of the site adjacent to Chandler Avenue appears to be currently graded while the remainder of the site retains gently undulating terrain and scattered vegetation. Historically the site appeared to be used for agricultural purposes and had undergone discing for weed removal. Given the lack of subsurface data, the undocumented nature of prior grading activities, and input from tribal representatives indicating sensitivity of the Project area for tribal cultural resources, the Project site should be considered to have a heightened potential for the presence of buried or otherwise unknown cultural resources.

RVA recommends that appropriate mitigation measures provided to the lead agency during the AB52 tribal consultation process be implemented during any proposed soil disturbing activities and that the appropriate tribal governments be contacted if cultural resources are recovered during the Project's life. As there is a potential to encounter subsurface cultural resources during soil disturbing activities, RVA also recommends the following mitigation

measure.

MM-CUL-1: A qualified archaeologist shall be retained to monitor grading of the site. At the pre-grading meeting, the archaeologist, and any Native American tribal representative(s), the applicant, and the excavation and grading contractor shall discuss appropriate grading and ground disturbing methods within archaeological and culturally sensitive areas within the Project development footprint. Should the archaeologist, after consultation with the appropriate Native American tribe(s), find the potential exists for impacts to archaeological resources, cultural resources and/or sacred sites, the archaeologist and the Native American tribal representative(s) shall actively monitor Project-related grading and shall have the authority to temporarily divert, redirect, or halt grading activity to allow recovery of archaeological and/or tribal cultural resources.

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APPENDIX A: CULTURAL RESOURCES STUDY FOR THE SUMMERWIND PROJECT

CULTURAL RESOURCES STUDY FOR THE SUMMERWIND PROJECT

CITY OF CALIMESA, CALIFORNIA

TTM 33536

Submitted to:

City of Calimesa
908 Park Avenue
Calimesa, California 92320

Prepared for:

Jen So Cal 1, LLC
Attn: Paul Onufer
556 South Fair Oaks Avenue, Suite 337
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Prepared by:

BFSA Environmental Services, a Perennial Company
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August 25, 2023

BFSA Environmental Services
A Perennial Company

Archaeological Database Information

Author(s):	Andrew J. Garrison, M.A., RPA
Consulting Firm:	BFSA Environmental Services, a Perennial Company 14010 Poway Road, Suite A Poway, California 92064
Report Date:	August 25, 2023
Report Title:	A Cultural Resources Study for the Summerwind SPA Project, City of Calimesa, Riverside County, California
Submitted to:	City of Calimesa 908 Park Avenue Calimesa, California 92320
Prepared for:	Jen So Cal 1, LLC Attn: Paul Onufer 556 South Fair Oaks Avenue, Suite 337 Pasadena, California 92205
USGS Quadrangle:	Sections 22, 23, and an unsectioned area identified as "Tract Between San Jacinto and Gorgonio," Township 2 South, Range 2 West of the San Bernardino Baseline and Meridian on the USGS *El Casco, California* (7.5-minute) Quadrangle.
Study Area:	Approximately 858 acres

Key Words: *El Casco* USGS Quadrangle (7.5–minute); archaeological survey; historic sites P-33-007296, P-33-013714, P-33-013715, P-33-013716, P-33-013719, P-33-013721, P-33-014999, P-33015001, P-33-015002, and P-33-015004; Temp-1, and Temp-2; recommended mitigation in compliance with the Summerwind Ranch at Oak Valley Specific Plan MMRP; Prehistoric site Site
5; mitigated through the Oak Valley Town Center MMRP; Archaeological and Native American monitoring recommended for all future ground disturbing activities.

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1.0 MANAGEMENT SUMMARY/ABSTRACT

In response to a request from the applicant, BFSA Environmental Services, a Perennial Company (BFSA), conducted an updated archaeological survey of the approximately 858-acre

Summerwind Specific Plan Amendment (SPA) Project. The Summerwind SPA Project includes

Phases 2 through 5 (Tentative Tract Map [TTM 33536]) of the Summerwind Ranch at Oak Valley

Specific Plan (SROVSP). The project is located within San Timoteo Canyon, north of Palmer Avenue, between Interstate 10 (I-10) and San Timoteo Canyon Road, city of Calimesa, Riverside County, California. Further the subject property is situated within Sections 22, 23, and an unsectioned area identified as the "Tract Between San Jacinto and Gorgonio," Township 2 South, Range 2 West of the San Bernardino Base and Meridian, as shown on the *El Casco, California*

U.S. Geological Survey (USGS) topographic quadrangle map (7.5-minute). As designed the Summerwind SPA Project consist of the future development of approximately 858 acres containing single and multi-family residential subdivisions, parks, schools, and open space along with associated landscaping and infrastructure. The City of Calimesa, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The study was conducted to identify and inventory cultural resources within the property and determine what, if any, mitigation measures not already established for the property under the SROVSP may be warranted.

Based upon the SROVSP Final EIR, the overall specific plan area contained 20 previously recorded cultural resources, 12 of which were located within the proposed "impact area" (EDAW, Inc. 2005). Of those 12, 10 (P-33-007296, P-33-013714, P-33-013715, P-33-013716, P-33013719, P-33-013721, P-33-014999, P-33-015001, P-33-015002, and P-33-015004) are located within the current Summerwind SPA Project boundaries. Sites P-33-013714, P-33-013715, P-33013716, P-33-013719, and P-33-013721 have all been evaluated as not eligible for the California Register of Historical Resources (CRHR) (Lawson et al 2004; Collision et al. 2022). Sites P-33007296, P-33-014999, P-33-015001, P-

33-015002, and P-33-015004 within the Summerwind SPA Project, were previously evaluataed as potentially eligible for the CRHR (Lawson et al 2004; EDAW, Inc. 2005).

Based upon the current project design, all significant elements of Site P-33-007296 are within an open-space preservation area and will not be impacted by the development. Sites P-33014999 and P-33-015001 are historic trash scatters. Site P-33-015002 consists of a series of water conveyance features spread out across the entirety of the SROVSP. Only two of the previously recorded water control features, Feature B and H are within the Summerwind SPA. Site P-33015004 was recorded as a potential historic district comprised of two ranch complexes (including P-33-007296), two trash scatters (P-33-014999 and P-33-015001), one historic isolate, and all the water control features recorded as P-33-015002. To mitigate impacts to resources within the SROVSP the Mitigation Monitoring and Reporting Program (MMRP) contained Mitigation Measure (MM) CR1. Based upon the existing MMRP for the SROVSP the only resource specific measures in place for the Summerwind SPA Project area are the focused study of any P-33-015002 water control features within the project and Phase II test excavations for historic trash scatters P33-014999 and P-33-015001. Also, given the sensitivity for cultural resources in the area the project is conditioned with both archaeological and Native American monitoring during any ground disturbing activities.

An archaeological record search was conducted by BFSA utilizing data from the Eastern Information Center (EIC) at the University of California Riverside (UCR) project documents for the previously developed SROVSP, and information from the current on-going development of the Oak Valley Town Center (OVTC) Project, located directly southeast of the Summerwind SPA property. The results of the records search (Appendix C) indicate that 48 cultural resources (four prehistoric, three multicomponent, and 41 historic) have been recorded within one mile of the subject property. Eleven of the resources (10 historic and one prehistoric) are within the Summerwind SPA Project. The 10 historic resources are those identified in the SROVSP MMRP while the prehistoric site is identified as Site 5. Site 5 (trinomial pending) was identified by HELIX Environmental Planning (HELIX) in 2022 during mitigation monitoring for the adjacent OVTC Project. The site consists of a prehistoric artifact scatter containing both flaked and ground stone tools and extends into the Summerwind SPA Project. As of the date of this report impacts to the site have been mitigated through the OVTC MMRP and the site area has been controlled graded, however, no significant subsurface deposits were identified.

BFSA field archaeologists John Baber, James Shrieve, and Vanessa Michaelsen conducted the pedestrian survey of the Summerwind SPA Project between May 18, June 14, and August 10, 2023. During the survey, ground visibility was characterized as poor due primarily to dense vegetation. The survey resulted in the relocation of Sites P-33-7296, P-33-013714, P-33-013715, P-33-013716, P-33-013721, P-33-014999, P-33-015001, P-33-015002, P-33-015004, and Site 5. Site P-33-013719 could not be relocated. The survey also located additional irrigation elements of Site P-33-015002 (Features Q and R). In addition, two previously unidentified trash scatters, Temp-1 and Temp-2, were located during the survey. Both Temp-1 and Temp-2 contain a scatter of historic refuse generally dating to the 1960s or 1970s.

Although new water control features (Features Q and R) and two new trash scatters (Temp1 and Temp-2) were identified during the current survey, these previously unidentified resources are consistent with Site P-33-015002 and the previously recorded P-33-014999 and P-33-015001. As such the already established mitigation measures requiring formal in-depth study and documentation of all water control features within the property applies to the Features Q and R. Likewise, established measures requiring Phase II test excavations at trash scatters within the project exist for P-33-014999 and P-33-015001 and it is recommended that those measures be extended to also apply to Temp-1 and Temp-2.

Based upon the results of current study no new mitigation measures for the Summerwind SPA Project are proposed. Rather it is recommended that the Summerwind SPA Project proceed with the previously established MMs for the project while incorporating Site P-33-015002 (Feature Q and Feature R), Site Temp-1, and Site Temp-2 into the already established project MMRP. This also includes the general condition requiring archaeological and Native American monitoring during grading. A recommended Cultural Resource Implementation Plan (CRIP) which includes tribal monitoring and location for a potential tribal repatriation area within the subject property is attached within Appendix F. A copy of this report will be permanently filed with the EIC at UCR. All notes, photographs, and other materials related to this project will be curated at the archaeological laboratory of BFSA in Poway, California.

2.0 INTRODUCTION

BFSA was retained by the applicant to conduct a cultural resources survey for the proposed Summerwind SPA Project located within San Timoteo Canyon, north of Palmer Avenue, between I-10 and San Timoteo Canyon Road, city of Calimesa, Riverside County, California (Figure 2.0– 1). The updated archaeological survey was conducted in order to comply with CEQA and City of Calimesa guidelines with regards to development-generated impacts to cultural resources. The project is situated in an area of moderate cultural resource sensitivity, as is suggested by known site density and predictive modeling. Sensitivity for cultural resources in a given area is usually indicated by known settlement patterns, which in the northwestern Riverside County area are focused around environments with accessible food and water.

The Summerwind SPA Project includes phases 2 through 5 of the SROVSP. The project is situated within Sections 22, 23, and an unsectioned area identified as the "Tract Between San Jacinto and Gorgonio," Township 2 South, Range 2 West of the San Bernardino Base and

Meridian, as shown on the USGS *El Casco, California* (7.5-minute) topographic quadrangle map (Figure 2.0–2). This study was conducted in support of an amendment to the Summerwind Ranch at Oak Valley Specific Plan, Area No. 1, Amendment No. 1, Final EIR (SROVSP). As designed the Summerwind SPA Project consist of the future development of approximately 858 acres containing single and multi-family residential subdivisions, parks, schools, and open space along with associated landscaping and infrastructure (Figure 2.0–3).

Based upon the SROVSP Final EIR, the overall specific plan area contained 20 previously recorded cultural resources 12 of which were located within the proposed "impact area" (EDAW, Inc. 2005) Of those 12, 10 (P-33-007296, P-33-013714, P-33-013715, P-33-013716, P-33013719, P-33-013721, P-33-014999, P-33-015001, P-33-015002, and P-33-015004) are located within the current Summerwind SPA Project boundaries. Sites P-33-013714, P-33-013715, P-33013716, P-33-013719, and P-33-013721 have all been evaluated as not eligible for the CRHR

(Lawson et al 2004; Collision et al. 2022). As such Site P-33-007296, P-33-014999, P-33-015001, P-33-015002, and P-33-015004 within the Summerwind SPA Project, were

previously evaluataed as potentially eligible for the CRHR (Lawson et al 2004; EDAW, Inc. 2005).

Based upon the current project design, all significant elements of Site P-33-007296 are within an open-space preservation area and will not be impacted by the development. Sites P-33014999 and P-33-015001 are historic trash scatters. Site P-33-015002 consists of various water conveyance features spread out across the entirety of the SROVSP. Only two of the previously recorded water control features, Feature B and H are within the Summerwind SPA. Site P-33015004 was recorded as a potential historic district comprised of two ranch complexes (including P-33-007296), two trash scatters (P-33-014999 and P-33-015001), one historic isolate, and all the water control features recorded as P-33-015002. The only previously recorded elements of P-33015004 within the Summerwind SPA Project are P-33-014999 and P-33-015001 and the aforementioned water control features. To mitigate impacts to resources within the SROVSP the

Mitigation Monitoring and Reporting Program (MMRP) contained Mitigation Measure (MM) CR1. MM-CR1 consists of a table outlining the specific measures for resources within the (SROVSP) (EDAW, Inc. 2005). The MM-CR1 table is presented below along with annotations to provide an update and better illustrate what resources and associated MMs are applicable to the Summerwind SPA Project.

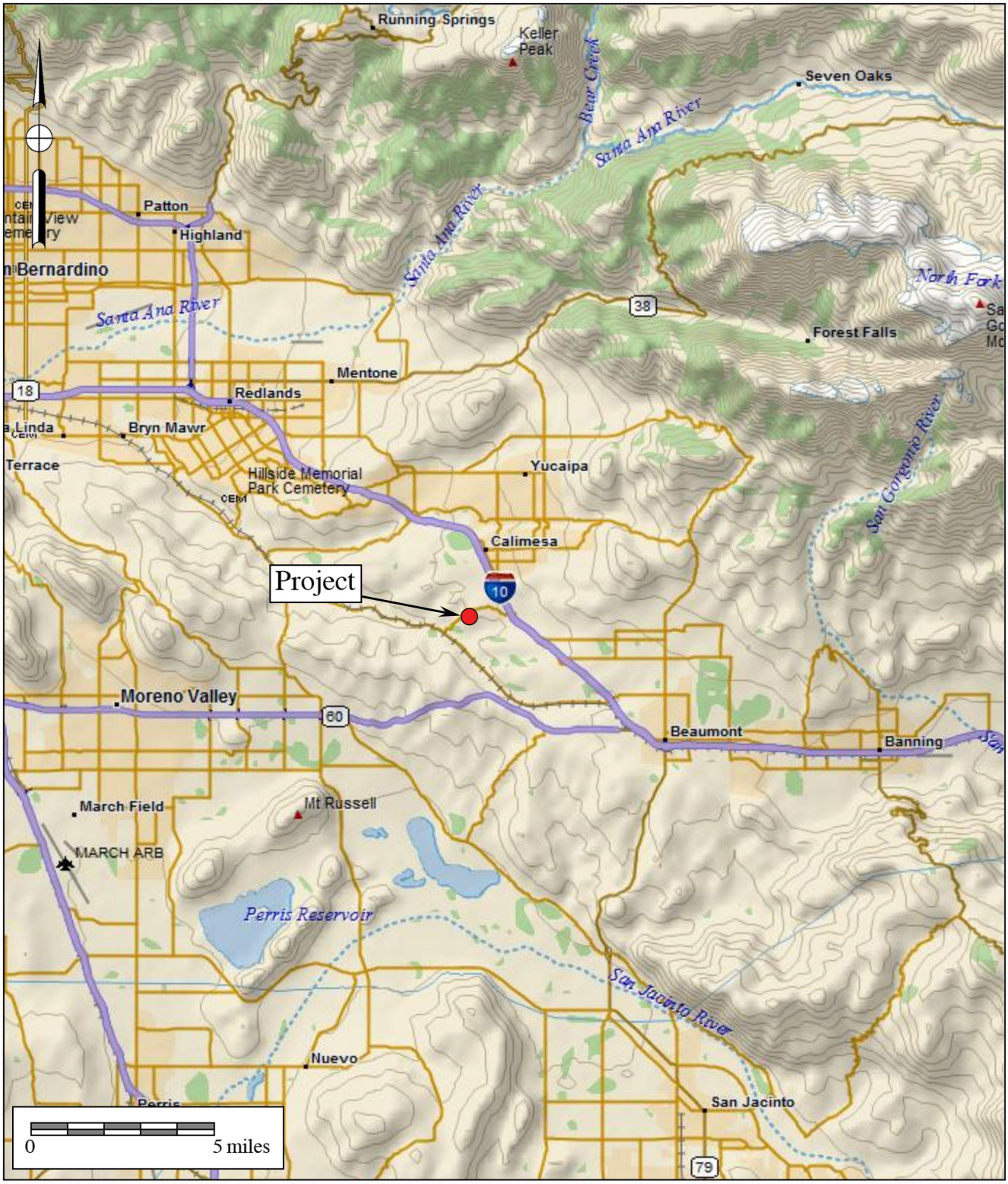
Table 2.0–1
Cultural Resources Mitigation Measures for Resources
from the SROVSP Final EIR

Resource	Description	Location	Mitigation Measure
[P-33-00]7296	Historic ranch complex	Preservation Area	Security fencing
LSA-SUC-337-S1 [P-33-014999]*	Historic refuse	Impact area	Phase II test excavations
LSA-SUC-337-S6 [P-33-015000]	Will Singleton Farm Complex	Impact area	Evaluation, including research and oral histories

LSA-SUC-337-S9 [P-33-015001]*	Historic refuse deposit	Impact area	Phase II test excavations
LSA-SUC-337-S10 [P-33-015002]*	Historic water conveyance feature[s]	Impact area	Focused, intensive surveys; possibly HAER documentation
LSA-SUC-337-I2 [P-33-015003]	Isolated historic spring tooth harrow	Impact area	Collect and donate to a local historical society
LSA-SUC-337-I1 [P-33-015024]	Isolated pestle	Preservation area	Collect and donate to a local Native American Tribe
Singleton Ranch Historic District [P-33-015004]*			Production of a popular history

**Includes the Summerwind SPA Project area*

Based upon the existing MMRP for the SROVSP the only resource specific measures in place for the Summerwind SPA Project area are focused study of any P-33-015002 water control features within the project and Phase II test excavations for historic trash scatters P-33-014999 and P-33-015001. Given the sensitivity for cultural resources in the area the project is also conditioned with both archaeological and Native American monitoring during ground disturbing activities.



BFSA Environmental Services
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Figure 2.0–1
General Location Map
The Summerwind SPA Project
DeLorme (1:250,000 series)

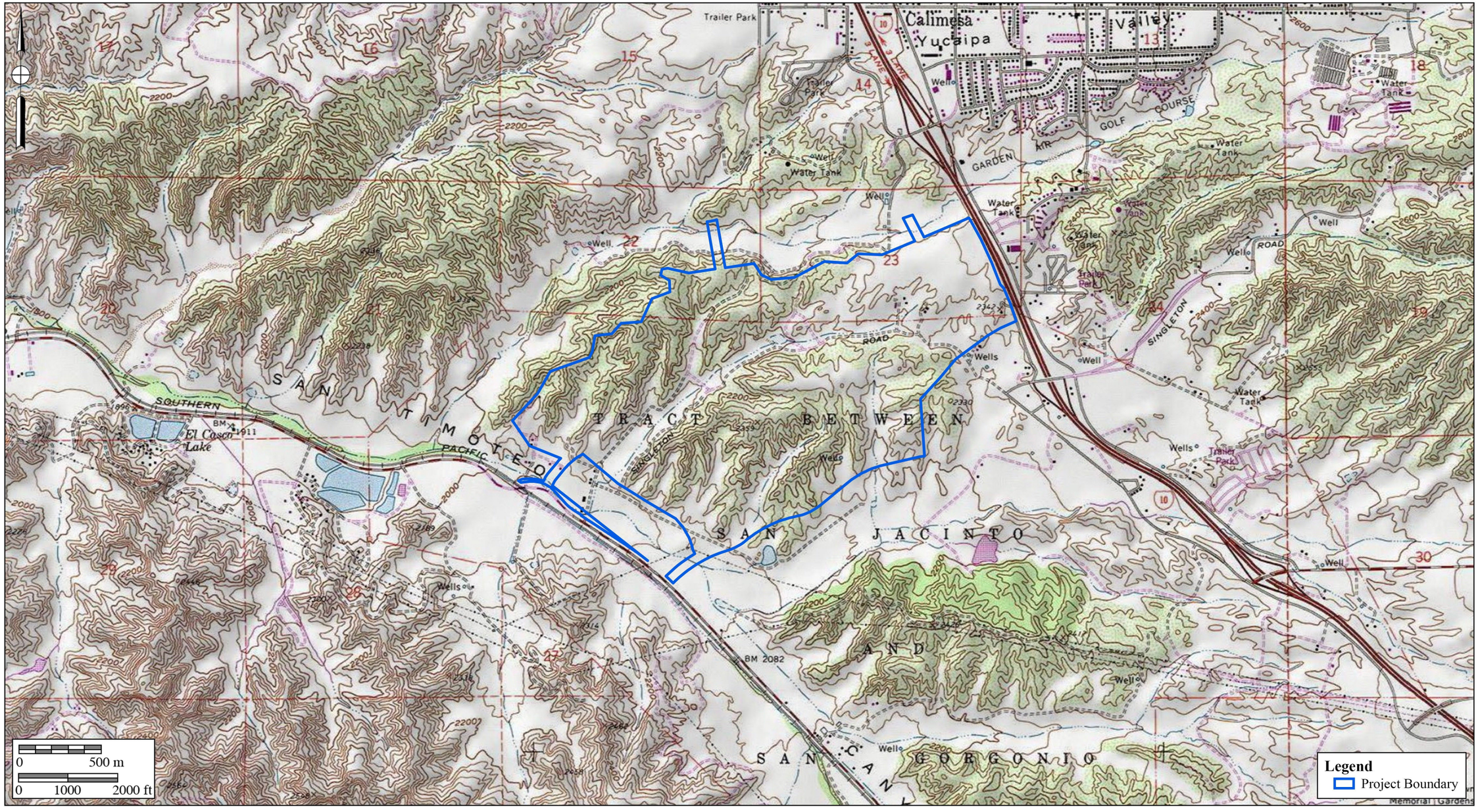

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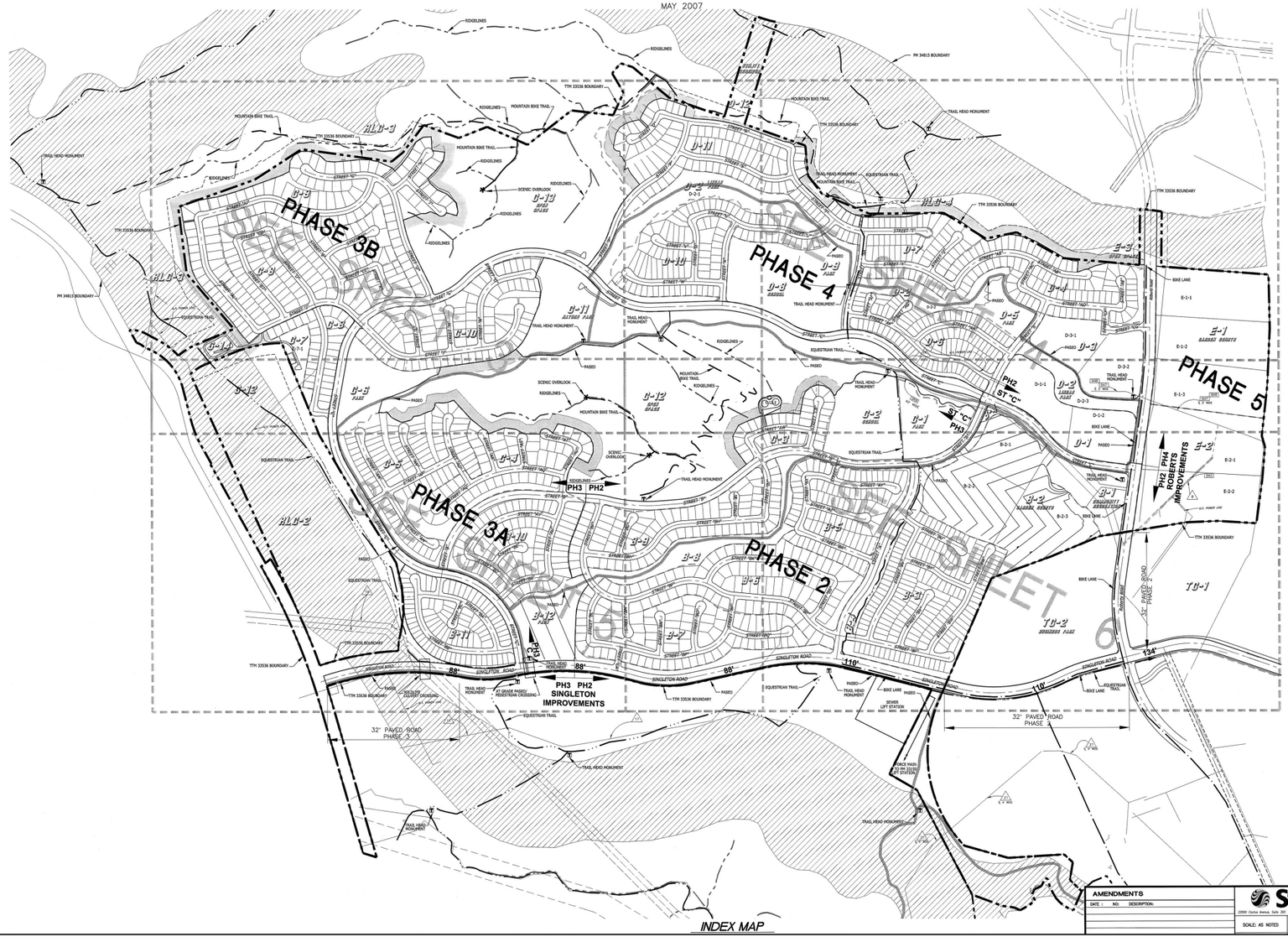
Figure 2.0–2
Project Location Map
The Summerwind SPA Project
USGS *El Casco* Quadrangle (7.5-minute series)

IN THE CITY OF CALIMESA, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP NO. 33536

BEING A SUBDIVISION OF PARCEL 1 RECORDED ON JUNE 15, 2004,
AS INSTRUMENT NO. 2004-0459674 AS SHOWN ON PARCEL MAP 31922
ON FILE IN BOOK PM 209 AT PAGES 31 THROUGH 38, INCLUSIVE, RECORDS
OF RIVERSIDE COUNTY, LYING WITHIN SECTIONS 23, 25 TO 27 OF TOWNSHIP 2 SOUTH,
RANGE 2 WEST, S.B.M. ALL IN THE CITY OF CALIMESA, COUNTY OF RIVERSIDE
STATE OF CALIFORNIA
MAY 2007



AMENDMENTS			Stantec	IN THE CITY OF CALIMESA	2
DATE	NO.	DESCRIPTION	23501 Cabot Avenue, Suite 200 Alicia Viejo, CA 92653-8624 (951) 367-6330	TENTATIVE TRACT MAP NO. 33536	OF 7 SHEETS
			SCALE: AS NOTED		

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Figure 2.0–3
Project Development Map
The Summerwind SPA Project

3.0 PROJECT SETTING

The project setting includes the natural, physical, geological, and biological context of the proposed project, as well as the cultural setting of prehistoric and historic human activities in the general area. The following sections discuss both the environmental and cultural settings at the subject property, the relationship between the two, and the relevance of that relationship to the project.

3.1 Environmental Setting

The Summerwind SPA Project is located in western Riverside County, just south of the county line with San Bernardino County, generally situated in the Peninsular Ranges Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the county, extends some 1,000 miles from the Raymond-Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California. The subject property is located within San Timoteo Canyon north of San Timoteo Creek. Generally, the property is comprised of steep hills and ridgelines separated by narrow valleys and canyons just northwest of the convergence of the San Timoteo Canyon and the San Gorgonio Pass. Various dirt access roads traverse the subject property including the east to west trending Woodhouse Road which generally bisects the western two-thirds of the property. Elevations within the project range from approximately 2,000 feet above mean sea level (AMSL) at the lowest point along the western boundary of the project to approximately 2,375 feet AMSL along the eastern edge.

Vegetation found within the subject property is dominated by dense non-native weeds and grasses. However, pockets of sage scrub and chaparral community plants are found throughout. Small pockets of riparian habitat also exist within the seasonal drainages that cut through many of the narrow canyons found within the property. During the prehistoric period, vegetation in the general area of the project provided sufficient food resources to support prehistoric human occupants. Animals that inhabited the project area during prehistoric times included mammals such as rabbits, squirrels, gophers, mice, rats, deer, and coyotes, in addition to a variety of reptiles and amphibians. The natural setting of the locale during prehistoric occupation offered a rich nutritional resource base. Natural drainages located within local canyons could have provided a source of water, in

addition to the San Timoteo Creek generally located along the southwestern border of the property.

3.2 Cultural Setting – Archaeological Perspectives

The archaeological perspective seeks to reconstruct past cultures based upon the material remains left behind. This is done using a range of scientific methodologies, almost all of which draw from evolutionary theory as the base framework. Archaeology allows one to look deeper into history or prehistory to see where the beginnings of ideas manifest via analysis of material culture, allowing for the understanding of outside forces that shape social change. Thus, the archaeological perspective allows one to better understand the consequences of the history of a given culture upon modern cultures. Archaeologists seek to understand the effects of past contexts of a given culture on *this* moment in time, not culture in context *in* the moment.

Despite this, a distinction exists between "emic" and "etic" ways of understanding material culture, prehistoric lifeways, and cultural phenomena in general (Harris 1991). While "emic" perspectives serve the subjective ways in which things are perceived and interpreted by the participants within a culture, "etic" perspectives are those of an outsider looking in hoping to attain a more scientific or "objective" understanding of the given phenomena. Archaeologists, by definition, will almost always serve an etic perspective as a result of the very nature of their work. As indicated by Laylander et al. (2014), it has sometimes been suggested that etic understanding, and therefore an archaeological understanding, is an imperfect and potentially ethnocentric attempt to arrive at emic understanding. In contrast to this, however, an etic understanding of material culture, cultural phenomena, and prehistoric lifeways can address significant dimensions of culture that lie entirely beyond the understanding or interest of those solely utilizing an emic perspective. As Harris (1991:20) appropriately points out, "Etic studies often involve the measurement and juxtaposition of activities and events that native informants find inappropriate or meaningless." This is also likely true of archaeological comparisons and juxtapositions of material culture. However, culture as a whole does not occur in a vacuum and is the result of several millennia of choices and consequences influencing everything from technology, to religions, to institutions. Archaeology allows for the ability to not only see what came before, but to see how those choices, changes, and consequences affect the present. Where possible, archaeology should seek to address both emic and etic

understandings to the extent that they may be recoverable from the archaeological record as manifestations of patterned human behavior (Laylander et al. 2014).

To that point, the culture history offered herein is primarily based upon archaeological (etic) and ethnographic (partially emic and partially etic) information. It is understood that the ethnographic record and early archaeological records were incompletely and imperfectly collected. In addition, in most cases, more than a century of intensive cultural change and cultural evolution had elapsed since the terminus of the prehistoric period. Coupled with the centuries and millennia of prehistoric change separating the "ethnographic present" from the prehistoric past, this has affected the emic and etic understandings of prehistoric cultural settings. Regardless, there remains a need to present the changing cultural setting within the region under investigation. As a result, both archaeological and Native American perspectives are offered when possible.

3.2.1 Introduction

Paleo Indian, Archaic Period Milling Stone Horizon, and the Late Prehistoric Takic groups are the three general cultural periods represented in Riverside County. The following discussion of the cultural history of Riverside County references the San Dieguito Complex, Encinitas Tradition, Milling Stone Horizon, La Jolla Complex, Pauma Complex, and San Luis Rey Complex, since these culture sequences have been used to describe archaeological manifestations in the region. The Late Prehistoric component present in the Riverside County area was primarily represented by the Cahuilla, Gabrielino, and Luiseño Indians; however, the project does also fall within an area likely occupied by the Serrano.

Absolute chronological information, where possible, will be incorporated into this archaeological discussion to examine the effectiveness of continuing to interchangeably use these terms. Reference will be made to the geological framework that divides the archaeologicallybased culture chronology of the area into four segments: the late Pleistocene (20,000 to 10,000 years before the present [YBP]), the early Holocene (10,000 to 6,650 YBP), the middle Holocene (6,650 to 3,350 YBP), and the late Holocene (3,350 to 200 YBP).

3.2.2 Paleo Indian Period (Late Pleistocene: 11,500 to circa 9,000 YBP)

Archaeologically, the Paleo Indian Period is associated with the terminus of the late Pleistocene (12,000 to 10,000 YBP). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin lands (Moratto 1984). However, by the terminus of the late Pleistocene, the climate became warmer, which caused the glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). The coastal shoreline at 10,000 YBP, depending upon the particular area of the coast, was near the 30-meter isobath, or two to six kilometers further west than its present location (Masters 1983).

Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. These people likely subsisted using a more generalized hunting, gathering, and collecting adaptation utilizing a variety of resources including birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995).

3.2.3 Archaic Period (Early and Middle Holocene: circa 9,000 to 1,300 YBP)

Archaeological data indicates that between 9,000 and 8,000 YBP, a widespread complex was established in the southern California region, primarily along the coast (Warren and True 1961). This complex is locally known as the La Jolla Complex (Rogers 1939; Moriarty 1966), which is regionally associated with the Encinitas Tradition (Warren 1968) and shares cultural components with the widespread Milling Stone Horizon (Wallace 1955). The coastal expression of this complex appeared in southern California coastal areas and focused upon coastal resources and the development of deeply stratified shell middens that were primarily located around bays and lagoons. The older sites associated with this expression are located at Topanga Canyon, Newport Bay, Agua Hedionda Lagoon, and some of the Channel Islands. Radiocarbon dates from sites attributed to this complex span a period of over 7,000 years in this region, beginning over 9,000 YBP.

The Encinitas Tradition is best recognized for its pattern of large coastal sites characterized by shell middens, grinding tools that are closely associated with the marine resources of the area, cobble-based tools, and flexed human burials (Shumway et al. 1961; Smith and Moriarty 1985). While ground stone tools and scrapers are the most recognized

tool types, coastal Encinitas Tradition sites also contain numerous utilized flakes, which may have been used to pry open shellfish. Artifact assemblages at coastal sites indicate a subsistence pattern focused upon shellfish collection and nearshore fishing. This suggests an incipient maritime adaptation with regional similarities to more northern sites of the same period (Koerper et al. 1986). Other artifacts associated with Encinitas Tradition sites include stone bowls, doughnut stones, discoidals, stone balls, and stone, bone, and shell beads.

The coastal lagoons in southern California supported large Milling Stone Horizon populations circa 6,000 YBP, as is shown by numerous radiocarbon dates from the many sites adjacent to the lagoons. The ensuing millennia were not stable environmentally, and by 3,000 YBP, many of the coastal sites in central San Diego County had been abandoned (Gallegos 1987, 1992). The abandonment of the area is usually attributed to the sedimentation of coastal lagoons and the resulting deterioration of fish and mollusk habitat. This is a well-documented situation at Batiquitos Lagoon, where over a two-thousand-year period, dominant mollusk species occurring in archaeological middens shift from deep-water mollusks (*Argopecten* sp.) to species tolerant of tidal flat conditions (*Chione* sp.), indicating water depth and temperature changes (Miller 1966; Gallegos 1987).

This situation likely occurred for other small drainages (Buena Vista, Agua Hedionda, San Marcos, and Escondido creeks) along the central San Diego coast where low flow rates did not produce sufficient discharge to flush the lagoons they fed (Buena Vista, Agua Hedionda, Batiquitos, and San Elijo lagoons) (Byrd 1998). Drainages along the northern and southern San Diego coastline were larger and sufficiently flushed the coastal hydrological features they fed, keeping them open to the ocean and allowing for continued human exploitation (Byrd 1998). Peñasquitos Lagoon exhibits dates as late as 2,355 YBP (Smith and Moriarty 1985) and San Diego Bay showed continuous occupation until the close of the Milling Stone Horizon (Gallegos and Kyle 1988). Additionally, data from several drainages in Camp Pendleton indicate a continued occupation of shell midden sites until the close of the period, indicating that coastal sites were not entirely abandoned during this time (Byrd 1998).

By 5,000 YBP, an inland expression of the La Jolla Complex is evident in the archaeological record, exhibiting influences from the Campbell Tradition from the north. These inland Milling Stone Horizon sites have been termed “Pauma Complex” (True 1958; Warren et al. 1961; Meighan 1954). By definition, Pauma Complex sites share a predominance of grinding implements (manos and metates), lack mollusk remains, have

greater tool variety (including atlatl dart points, quarry-based tools, and crescentics), and seem to express a more sedentary lifestyle with a subsistence economy based upon the use of a broad variety of terrestrial resources. Although originally viewed as a separate culture from the coastal La Jolla Complex (True 1980), it appears that these inland sites may be part of a subsistence and settlement system utilized by the coastal peoples. Evidence from the 4S Project in inland San Diego County suggests that these inland sites may represent seasonal components within an annual subsistence round by La Jolla Complex populations (Raven-Jennings et al. 1996). Including both coastal and inland sites of this time period in discussions of the Encinitas Tradition, therefore, provides a more complete appraisal of the settlement and subsistence system exhibited by this cultural complex.

More recent work by Sutton has identified a more localized complex known as the Greven Knoll Complex. The Greven Knoll Complex is a redefined northern inland expression of the

Encinitas Tradition first put forth by Mark Sutton and Jill Gardner (2010). Sutton and Gardner (2010:25) state that "[t]he early millingstone archaeological record in the northern portion of the interior southern California was not formally named but was often referred to as 'Inland Millingstone,' 'Encinitas,' or even 'Topanga.'" Therefore, they proposed that all expressions of the inland Milling Stone in southern California north of San Diego County be grouped together in the Greven Knoll Complex.

The Greven Knoll Complex, as postulated by Sutton and Gardner (2010), is broken into three phases and obtained its name from the type-site Greven Knoll located in Yucaipa, California. Presently, the Greven Knoll Site is part of the Yukaipa't Site (SBR-1000) and was combined with the adjacent Simpson Site. Excavations at Greven Knoll recovered manos, metates, projectile points, discoidal cogged stones, and a flexed inhumation with a possible cremation (Kowta

1969:39). It is believed that the Greven Knoll Site was occupied between 5,000 and 3,500 YBP. The Simpson Site contained mortars, pestles, side-notched points, and stone and shell beads.

Based upon the data recovered at these sites, Kowta (1969:39) suggested that "coastal Milling Stone Complexes extended to and interdigitated with the desert Pinto Basin Complex in the vicinity of the Cajon Pass."

Phase I of the Greven Knoll Complex is generally dominated by the presence of manos and metates, core tools, hammerstones, large dart points, flexed inhumations, and occasional cremations. Mortars and pestles are absent from this early phase, and the subsistence economy emphasized hunting. Sutton and Gardner (2010:26) propose that the similarity of the material culture of Greven Knoll Phase I and that found in the Mojave Desert at Pinto Period sites indicates that the Greven Knoll Complex was influenced by neighbors to the north at that time. Accordingly, Sutton and Gardner (2010) believe that Greven Knoll Phase I may have appeared as early as 9,400 YBP and lasted until about 4,000 YBP.

Greven Knoll Phase II is associated with a period between 4,000 and 3,000 YBP. Artifacts common to Greven Knoll Phase II include manos and metates, Elko points, core tools, and discoidals. Pestles and mortars are present; however, they are only represented in small numbers. Finally, there is an emphasis upon hunting and gathering for subsistence (Sutton and Gardner 2010:8).

Greven Knoll Phase III includes manos, metates, Elko points, scraper planes, choppers, hammerstones, and discoidals. Again, small numbers of mortars and pestles are present. Greven Knoll Phase III spans from approximately 3,000 to 1,000 YBP and shows a reliance upon seeds and yucca. Hunting is still important, but bones seem to have been processed to obtain bone grease more often in this later phase (Sutton and Gardner 2010:8).

The shift in food processing technologies during each of these phases indicate a change in subsistence strategies; although people were still hunting for large game, plant-based foods eventually became the primary dietary resource (Sutton 2011a). Sutton's (2011b) argument posits that the development of mortars and pestles during the middle Holocene can be attributed to the year-round exploitation of acorns as a main dietary provision. Additionally, the warmer and drier climate may have been responsible for groups from the east moving toward coastal populations, which is archaeologically represented by the interchange of coastal and eastern cultural traits (Sutton 2011a).

3.2.4 Late Prehistoric Period (Late Holocene: 1,300 YBP to 1790)

Many Native American groups in the region hold the world view that as a population, they were created in southern California. Archaeological and anthropological data, however, proposes a scientific/archaeological perspective, suggesting that at approximately 1,350 YBP, Takicspeaking groups from the Great Basin region moved into

Riverside County, marking the transition to the Late Prehistoric Period. An analysis of the Takic expansion by Sutton (2009) indicates that inland southern California was occupied by "proto-Yuman" populations before 1,000 YBP. The comprehensive, multi-phase model offered by Sutton (2009) employs linguistic, ethnographic, archaeological, and biological data to solidify a reasonable argument for population replacement of Takic groups to the north by Penutians (Laylander 1985). As a result, it is believed that Takic expansion occurred starting around 3,500 YBP moving toward southern California, with the Gabrielino language diffusing south into neighboring Yuman (Hokan) groups around 1,500 to 1,000 YBP, possibly resulting in the Luiseño dialect.

Based upon Sutton's model, the final Takic expansion would not have occurred until about 1,000 YBP, resulting in Vanyume, Serrano, Cahuilla, and Cupeño dialects. The model suggests that the Luiseño did not simply replace Hokan speakers, but were rather a northern San Diego County/southern Riverside County Yuman population who adopted the Takic language. This period is characterized by higher population densities and elaborations in social, political, and technological systems. Economic systems diversified and intensified during this period with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive, yet effective, technological innovations. Technological developments during this period included the introduction of the bow and arrow between A.D. 400 and 600 and the introduction of ceramics. Atlatl dart points were replaced by smaller arrow darts, including Cottonwood series points. Other hallmarks of the Late Prehistoric Period include extensive trade networks as far-reaching as the Colorado River Basin and cremation of the dead.

3.2.5 Protohistoric Period (Late Holocene: 1790 to Present)

Ethnohistoric and ethnographic evidence indicates that primarily three Takic-speaking groups occupied Riverside County: the Cahuilla, the Gabrielino, and the Luiseño. However, the project is also located near the territory known to have been occupied by the Serrano. The geographic boundaries between these groups in pre- and proto-historic times are difficult to place. This group was a seasonal hunting and gathering people with cultural elements that were very distinct from Archaic Period peoples. These distinctions include cremation of the dead, the use of the bow and arrow, and exploitation of the acorn as a main food staple (Moratto 1984). Along the coast, the Luiseño made use of available marine resources by fishing and collecting mollusks for food. Seasonally available terrestrial resources, including acorns and game, were also sources of nourishment for

Luiseño groups. Elaborate kinship and clan systems between the Luiseño and other groups facilitated a wide-reaching trade network that included trade of Obsidian Butte obsidian and other resources from the eastern deserts, as well as steatite from the Channel Islands.

According to Charles Handley (1967), the primary settlements of Late Prehistoric Luiseño Indians in the San Jacinto Plain were represented by Ivah and Soboba near Soboba Springs, Jusipah near the town of San Jacinto, Ararah in Webster's Canyon en route to Idyllwild, Pahsitha near Big Springs Ranch southeast of Hemet, and Corova in Castillo Canyon. These locations share features such as the availability of food and water resources. Features of this land use include petroglyphs and pictographs, as well as widespread milling, which is evident in bedrock and portable implements. Groups in the vicinity of the project, neighboring the Luiseño, include the Cahuilla and the Gabrielino. Ethnographic data for the three groups is presented below.

Luiseño: An Archaeological and Ethnographic Perspective

When contacted by the Spanish in the sixteenth century, the Luiseño occupied a territory bounded on the west by the Pacific Ocean, on the east by the Peninsular Ranges mountains at San Jacinto (including Palomar Mountain to the south and Santiago Peak to the north), on the south by

Agua Hedionda Lagoon, and on the north by Aliso Creek in present-day San Juan Capistrano. The Luiseño were a Takic-speaking people more closely related linguistically and ethnographically to the Cahuilla, Gabrielino, and Cupeño to the north and east rather than the Kumeyaay who occupied territory to the south. The Luiseño differed from their neighboring Takic speakers in having an extensive proliferation of social statuses, a system of ruling families that provided ethnic cohesion within the territory, a distinct worldview that stemmed from the use of datura (a hallucinogen), and an elaborate religion that included the creation of sacred sand paintings depicting the deity Chingichngish (Bean and Shipek 1978; Kroeber 1976).

Subsistence and Settlement

The Luiseño occupied sedentary villages most often located in sheltered areas in valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were located near water sources to facilitate acorn leaching and in areas that offered thermal and defensive protection. Villages were comprised of areas that were publicly and

privately (by family) owned. Publicly owned areas included trails, temporary campsites, hunting areas, and quarry sites. Inland groups had fishing and gathering sites along the coast that were intensively used from January to March when inland food resources were scarce. During October and November, most of the village would relocate to mountain oak groves to harvest acorns. The Luiseño remained at village sites for the remainder of the year, where food resources were within a day's travel (Bean and Shipek 1978; Kroeber 1976).

The most important food source for the Luiseño was the acorn, six different species of which were used (*Quercus californica, Quercus agrifolia, Quercus chrysolepis, Quercus dumosa, Quercus engelmannii,* and *Quercus wislizenii*). Seeds, particularly of grasses, flowering plants, and mints, were also heavily exploited. Seed-bearing species were encouraged through controlled burns, which were conducted at least every third year. A variety of other stems, leaves, shoots, bulbs, roots, and fruits were also collected. Hunting augmented this vegetal diet. Animal species taken included deer, rabbit, hare, woodrat, ground squirrel, antelope, quail, duck, freshwater fish from mountain streams, marine mammals, and other sea creatures such as fish, crustaceans, and mollusks (particularly abalone, or *Haliotis* sp.). In addition, a variety of snakes, small birds, and rodents were eaten (Bean and Shipek 1978; Kroeber 1976).

Social Organization

Social groups within the Luiseño nation consisted of patrilinear families or clans, which were politically and economically autonomous. Several clans comprised a religious party, or nota, which was headed by a chief who organized ceremonies and controlled economics and warfare. The chief had assistants who specialized in particular aspects of ceremonial or environmental knowledge and who, with the chief, were part of a religion-based social group with special access to supernatural power, particularly that of Chingichngish. The positions of chief and assistants were hereditary, and the complexity and multiplicity of these specialists' roles likely increased in coastal and larger inland villages (Bean and Shipek 1978; Kroeber 1976; Strong 1929).

Marriages were arranged by the parents, often made to forge alliances between lineages. Useful alliances included those between groups of differing ecological niches and those that resulted in territorial expansion. Residence was patrilocal (Bean and Shipek 1978; Kroeber 1976). Women were primarily responsible for plant gathering and men principally hunted, but at times, particularly during acorn and marine mollusk harvests, there was no division of labor. Elderly women cared for children and elderly men

participated in rituals, ceremonies, and political affairs. They were also responsible for manufacturing hunting and ritual implements. Children were taught subsistence skills at the earliest age possible (Bean and Shipek 1978; Kroeber 1976).

Material Culture

House structures were conical, partially subterranean, and thatched with reeds, brush, or bark. Ramadas were rectangular, protected workplaces for domestic chores such as cooking.

Ceremonial sweathouses were important in purification rituals; these were round and partially subterranean thatched structures covered with a layer of mud. Another ceremonial structure was the wámkis (located in the center of the village, serving as the place of rituals), where sand paintings and other rituals associated with the Chingichngish religious group were performed (Bean and Shipek 1978; Kroeber 1976).

Clothing was minimal; women wore a cedar-bark and netted twine double apron and men wore a waist cord. In cold weather, cloaks or robes of rabbit fur, deerskin, or sea otter fur were worn by both sexes. Footwear included deerskin moccasins and sandals fashioned from yucca fibers. Adornments included bead necklaces and pendants made of bone, clay, stone, shell, bear claw, mica, deer hooves, and abalone shell. Men wore ear and nose piercings made from cane or bone, which were sometimes decorated with beads. Other adornments were commonly decorated with semiprecious stones including quartz, topaz, garnet, opal, opalite, agate, and jasper (Bean and Shipek 1978; Kroeber 1976).

Hunting implements included the bow and arrow. Arrows were tipped with either a carved, fire-hardened wood tip or a lithic point, usually fashioned from locally available metavolcanic material or quartz. Throwing sticks fashioned from wood were used in hunting small game, while deer head decoys were used during deer hunts. Coastal groups fashioned dugout canoes for nearshore fishing and harvested fish with seines, nets, traps, and hooks made of bone or abalone shell (Bean and Shipek 1978; Kroeber 1976).

The Luiseño had a well-developed basket industry. Baskets were used in resource gathering, food preparation, storage, and food serving. Ceramic containers were shaped by paddle and anvil and fired in shallow, open pits to be used for food storage, cooking, and serving. Other utensils included wood implements, steatite bowls, and ground stone manos, metates, mortars, and pestles (Bean and Shipek 1978; Kroeber 1976). Additional tools such as knives, scrapers, choppers, awls, and drills were also used. Shamanistic

items include soapstone or clay smoking pipes and quartz or tourmaline crystals (Bean and Shipek 1978; Kroeber 1976).

Cahuilla: An Archaeological and Ethnographic Perspective

According to Bean (1978) and Kroeber (1976), at the time of Spanish contact in the sixteenth century, the Cahuilla occupied territory that included the Orocopia Mountains, and the Chocolate Mountains to the west; Salton Sea and Borrego Springs to the south; Palomar Mountain and Lake Mathews to the east; and the San Bernardino Mountains and Santa Ana River to the north. According to Bean et al. (1992) the Cahuilla were centered around the San Jacinto and Santa Rosa mountains. While Milanovich (2021), quoting the Late Cahuilla elder Alvino Siva, states, "The Cahuilla boundaries existed as far west as Colton, north to the San Bernadino Mountains, east to the Chocolate Mountains, and south to Palomar Mountain."

The Cahuilla are a Takic-speaking people closely related to their Gabrielino and Luiseño neighbors, although relations with the Gabrielino were more intense than with the Luiseño. They differ from the Luiseño and Gabrielino in that their religion is more similar to the Mohave tribes of the eastern deserts than the Chingichngish religious group of the Luiseño and Gabrielino. The following is a summary of ethnographic data regarding this group (Bean 1978; Kroeber 1976).

Subsistence and Settlement

Cahuilla villages were typically permanent and located on low terraces within canyons in proximity to water sources. These locations proved to be rich in food resources and also afforded protection from prevailing winds. Villages had areas that were publicly owned and areas that were privately owned by clans, families, or individuals. Each village was associated with a particular lineage and series of sacred sites that included unique petroglyphs and pictographs. Villages were occupied throughout the year; however, during a several-week period in the fall, most of the village members relocated to mountain oak groves to take part in acorn harvesting (Bean 1978; Kroeber 1976).

The Cahuilla's use of plant resources is well documented. Plant foods harvested by the Cahuilla included valley oak acorns and single-leaf pinyon pine nuts. Other important plant species included bean and screw mesquite, agave, Mohave yucca, cacti, palm, chia, quail brush, yellowray goldfield, goosefoot, manzanita, catsclaw, desert lily, mariposa lily,

and a number of other species such as grass seed. A number of agricultural domesticates were acquired from the Colorado River tribes including corn, bean, squash, and melon grown in limited amounts. Animal species taken included deer, bighorn sheep, pronghorn antelope, rabbit, hare, rat, quail, dove, duck, roadrunner, and a variety of rodents, reptiles, fish, and insects (Bean 1978; Kroeber 1976).

Social Organization

The Cahuilla was not a political nation, but rather a cultural nationality with a common language. Two non-political, non-territorial patrimoieties were recognized: the Wildcats (túktem) and the Coyotes (?ístam). Lineage and kinship were memorized at a young age among the Cahuilla, providing a backdrop for political relationships. Clans were comprised of three to 10 lineages; each lineage owned a village site and specific resource areas. Lineages within a clan cooperated in subsistence activities, defense, and rituals (Bean 1978; Kroeber 1976).

A system of ceremonial hierarchy operated within each lineage. The hierarchy included the lineage leader, who was responsible for leading subsistence activities, guarding the sacred bundle, and negotiating with other lineage leaders in matters concerning land use, boundary disputes, marriage arrangements, trade, warfare, and ceremonies. The ceremonial assistant to the lineage leader was responsible for organizing ceremonies. A ceremonial singer possessed and performed songs at rituals and trained assistant singers. The shaman cured illnesses through supernatural powers, controlled natural phenomena, and was the guardian of ceremonies, keeping evil spirits away. The diviner was responsible for finding lost objects, telling future events, and locating game and other food resources. Doctors were usually older women who cured various ailments and illnesses with their knowledge of medicinal herbs. Finally, certain Cahuilla specialized as traders, who ranged as far west as Santa Catalina and as far east as the Gila River (Bean 1978; Kroeber 1976).

Marriages were arranged by parents from opposite moieties. When a child was born, an alliance formed between the families, which included frequent reciprocal exchanges. The Cahuilla kinship system extended to relatives within five generations. Important economic decisions, primarily the distribution of goods, operated within this kinship system (Bean 1978; Kroeber 1976).

Material Culture

Cahuilla houses were dome-shaped or rectangular, thatched structures. The home of the lineage leader was the largest, located near the ceremonial house with the best access to water. Other structures within the village included the men's sweathouse and granaries (Bean 1978; Kroeber 1976).

Cahuilla clothing, like other groups in the area, was minimal. Men typically wore a loincloth and sandals; women wore skirts made from mesquite bark, animal skin, or tules. Babies wore mesquite bark diapers. Rabbit skin cloaks were worn in cold weather (Bean 1978; Kroeber 1976).

Hunting implements included the bow and arrow, throwing sticks, and clubs. Grinding tools used in food processing included manos, metates, and wood mortars. The Cahuilla were known to use long grinding implements made from wood to process mesquite beans; the mortar was typically a hollowed log buried in the ground. Other tools included steatite arrow shaft straighteners (Bean 1978; Kroeber 1976).

Baskets were made from rush, deer grass, and skunkbrush. Different species and leaves were chosen for different colors in the basket design. Coiled-ware baskets were either flat (for plates, trays, or winnowing), bowl-shaped (for food serving), deep, inverted, and cone-shaped (for transporting), or rounded and flat-bottomed for storing utensils and personal items (Bean 1978; Kroeber 1976).

Cahuilla pottery was made from a thin, red-colored ceramic ware that was often painted and incised. Four basic vessel types are known for the Cahuilla: small-mouthed jars, cooking pots, bowls, and dishes. Additionally, smoking pipes and flutes were fashioned from ceramic (Bean 1978; Kroeber 1976).

Serrano: An Archaeological and Ethnographic Perspective

Aboriginally, the Serrano occupied an area east of present-day Los Angeles. According to Bean and Smith (1978b), definitive boundaries are difficult to place for the Serrano due to their sociopolitical organization and a lack of reliable data:

> The Serrano were organized into autonomous localized lineages occupying definite, favored territories, but rarely claiming any territory far removed from the lineage's home base. Since the entire dialectical group was neither politically united nor amalgamated into supralineage groups, as many of their neighbors were, one must

> speak in terms of generalized areas of usage rather than pan-tribal holdings. (Strong [1971] in Bean and Smith 1978b)

However, researchers place the Serrano in the San Bernardino Mountains east of Cajon Pass and at the base of and north of the mountains near Victorville, east to Twentynine Palms, and south to the Yucaipa Valley (Bean and Smith 1978b). Serrano has been used broadly for languages in the Takic family including Serrano, Kitanemuk, Vanyume, and Tataviam.

Subsistence and Settlement

Serrano village locations were typically located near water sources. Individual family dwellings were likely circular, domed structures. Daily household activities would either take place outside of the house out in the open, or under a ramada constructed of a thatched willow pole roof held up by four or more poles inserted into the ground. Families could consist of a husband, wife/wives, unmarried female children, married male children, the husband's parents, and/or widowed aunts and uncles. Rarely, an individual would occupy his own house, typically in the mountains. Serrano villages also included a large ceremonial house where the lineage leader would live, which served as the religious center for lineages or lineage-sets, granaries, and sweathouses (Bean and Smith 1978b).

The Serrano were primarily hunters and gatherers. Vegetal staples varied with locality. Acorns and piñon nuts were found in the foothills, and mesquite, yucca roots, cacti fruits, and piñon nuts were found in or near the desert regions. Diets were supplemented with other roots, bulbs, shoots, and seeds (Heizer 1978). Deer, mountain sheep, antelopes, rabbits, and other small rodents were among the principal food packages. Various game birds, especially quail, were also hunted. The bow and arrow were used for large game, while smaller game and birds were killed with curved throwing sticks, traps, and snares. Occasionally, game was hunted communally, often during mourning ceremonies (Benedict 1924; Drucker 1937; Heizer 1978). Earth ovens were used to cook meat, bones were boiled to extract marrow, and blood was either drunk cold or cooked to a thicker consistency and then eaten. Some meat and vegetables were sun-dried and stored. Food acquisition and processing required the manufacture of additional items such as knives, stone or bone scrapers, pottery trays and bowls, bone or horn spoons, and stirrers. Mortars, made of either stone or wood, and metates were also manufactured (Strong 1971; Drucker 1937; Benedict 1924).

Social Organization

The Serrano were part of "exogamous clans, which in turn were affiliated with one of two exogamous moieties, *tuk^{w}utam* (Wildcat) and *wahiʔiam* (Coyote)" (Bean and Smith 1978b). According to Strong (1971), details such as number, structure, and function of the clans are unknown. Instead, he states that clans were not political, but were rather structured based upon "economic, marital, or ceremonial reciprocity, a pattern common throughout Southern California" (Bean and Smith 1978b). The Serrano formed alliances amongst their own clans and with Cahuilla, Chemehuevi, Gabrielino, and Cupeño clans (Bean and Smith 1978b). Clans were large, autonomous, political, and landholding units formed patrilineally, with all males descending from a common male ancestor, including all wives and descendants of the males. However, even after marriage, women would still keep their original lineage, and would still participate in those ceremonies (Bean and Smith 1978b).

According to Bean and Smith (1978b), the cosmogony and cosmography of the Serrano are very similar to those of the Cahuilla:

> There are twin creator gods, a creation myth told in "epic poem" style, each local group having its own origin story, water babies whose crying foretells death, supernatural beings of various kinds and on various hierarchically arranged poweraccess levels, an Orpheus-like myth, mythical deer that no one can kill, and tales relating the adventures (and misadventures) of Coyote, a tragicomic trickstertransformer culture hero. (Bean [1962-1972] and Benedict [1924] in Bean and Smith 1978b)

The Serrano had a shaman, a person who acquired their powers through dreams, which were induced through ingestion of the hallucinogen datura. The shaman was mostly a curer/healer, using herbal remedies and "sucking out the disease-causing agents" (Bean and Smith 1978b).

Material Culture

The Serrano were very similar technologically to the Cahuilla. In general, manufactured goods included baskets, some pottery, rabbit-skin blankets, awls, arrow straighteners, sinewbacked bows, arrows, fire drills, stone pipes, musical instruments

(rattles, rasps, whistles, bullroarers, and flutes), feathered costumes, mats for floor and wall coverings, bags, storage pouches, cordage (usually comprised of yucca fiber), and nets (Heizer 1978).

Gabrielino: An Archaeological and Ethnographic Perspective

The territory of the Gabrielino at the time of Spanish contact covers much of present-day Los Angeles and Orange counties. The southern extent of this culture area is bounded by Aliso Creek, the eastern extent is located east of present-day San Bernardino along the Santa Ana River, the northern extent includes the San Fernando Valley, and the western extent includes portions of the Santa Monica Mountains. The Gabrielino also occupied several Channel Islands including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. Because of their access to certain resources, including a steatite source from Santa Catalina Island, this group was among the wealthiest and most populous aboriginal groups in all of southern California. Trade of materials and resources controlled by the Gabrielino extended as far north as the San Joaquin Valley, as far east as the Colorado River, and as far south as Baja California (Bean and Smith 1978a; Kroeber 1976).

Subsistence and Settlement

The Gabrielino lived in permanent villages and occupied smaller resource-gathering camps at various times of the year depending upon the seasonality of the resource. Larger villages were comprised of several families or clans, while smaller, seasonal camps typically housed smaller family units. The coastal area between San Pedro and Topanga Canyon was the location of primary subsistence villages, while secondary sites were located near inland sage stands, oak groves, and pine forests. Permanent villages were located along rivers and streams and in sheltered areas along the coast. As previously mentioned, the Channel Islands were also the locations of relatively large settlements (Bean and Smith 1978a; Kroeber 1976).

Resources procured along the coast and on the islands were primarily marine in nature and included tuna, swordfish, ray and shark, California sea lion, Stellar sea lion, harbor seal, northern elephant seal, sea otter, dolphin and porpoise, various waterfowl species, numerous fish species, purple sea urchin, and mollusks, such as rock scallop, California mussel, and limpet. Inland resources included oak acorn, pine nut, Mohave yucca, cacti, sage, grass nut, deer, rabbit, hare, rodent, quail, duck, and a variety of reptiles

such as western pond turtle and numerous snake species (Bean and Smith 1978a; Kroeber 1976).

Social Organization

Little is known about the social structure of the Gabrielino; however, there appears to have been at least three social classes: 1) the elite, which included the rich, chiefs, and their immediate family; 2) a middle class, which included people of relatively high economic status or longestablished lineages; and 3) a class of people that included most other individuals in the society. Villages were politically autonomous units comprised of several lineages. During times of the year when certain seasonal resources were available, the village would divide into lineage groups and move out to exploit them, returning to the village between forays (Bean and Smith 1978a; Kroeber 1976).

Each lineage had its own leader, with the village chief coming from the dominant lineage. Several villages might be allied under a paramount chief. Chief positions were of an ascribed status, most often passed to the eldest son. Chief duties included providing village cohesion, leading warfare and peace negotiations with other groups, collecting tribute from the village(s) under his jurisdiction, and arbitrating disputes within the village(s). The status of the chief was legitimized by his safekeeping of the sacred bundle, a representation of the link between the material and spiritual realms and the embodiment of power (Bean and Smith 1978a; Kroeber 1976).

Shamans were leaders in the spirit realm. The duties of the shaman included conducting healing and curing ceremonies, guarding the sacred bundle, locating lost items, identifying and collecting poisons for arrows, and making rain (Bean and Smith 1978a; Kroeber 1976).

Marriages were made between individuals of equal social status and, in the case of powerful lineages, marriages were arranged to establish political ties between the lineages (Bean and Smith 1978a; Kroeber 1976).

Men conducted the majority of the heavy labor, hunting, fishing, and trading with other groups. Women's duties included gathering and preparing plant and animal resources, and making baskets, pots, and clothing (Bean and Smith 1978a; Kroeber 1976).

Material Culture

Gabrielino houses were domed, circular structures made of thatched vegetation. Houses varied in size and could house from one to several families. Sweathouses (semicircular, earthcovered buildings) were public structures used in male social ceremonies. Other structures included menstrual huts and a ceremonial structure called a yuvar, an open-air structure built near the chief's house (Bean and Smith 1978a; Kroeber 1976).

Clothing was minimal; men and children most often went naked, while women wore deerskin or bark aprons. In cold weather, deerskin, rabbit fur, or bird skin (with feathers intact) cloaks were worn. Island and coastal groups used sea otter fur for cloaks. In areas of rough terrain, yucca fiber sandals were worn. Women often used red ochre on their faces and skin for adornment or protection from the sun. Adornment items included feathers, fur, shells, and beads (Bean and Smith 1978a; Kroeber 1976).

Hunting implements included wood clubs, sinew-backed bows, slings, and throwing clubs. Maritime implements included rafts, harpoons, spears, hook and line, and nets. A variety of other tools included deer scapulae saws, bone and shell needles, bone awls, scrapers, bone or shell flakers, wedges, stone knives and drills, metates, mullers, manos, shell spoons, bark platters, and wood paddles and bowls. Baskets were made from rush, deer grass, and skunkbush. Baskets were fashioned for hoppers, plates, trays, and winnowers for leaching, straining, and gathering. Baskets were also used for storing, preparing, and serving food, and for keeping personal and ceremonial items (Bean and Smith 1978a; Kroeber 1976).

The Gabrielino had exclusive access to soapstone, or steatite, procured from Santa Catalina Island quarries. This highly prized material was used for making pipes, animal carvings, ritual objects, ornaments, and cooking utensils. The Gabrielino profited well from trading steatite since it was valued so much by groups throughout southern California (Bean and Smith 1978a; Kroeber 1976).

3.2.6 Ethnohistoric Period (1769 to Present)

Traditionally, the history of the state of California has been divided into three general periods: the Spanish Period (1769 to 1821), the Mexican Period (1822 to 1846), and the American Period (1848 to present) (Caughey 1970). The American Period is often further subdivided into additional phases: the nineteenth century (1848 to 1900), the early twentieth century (1900 to 1950), and the Modern Period (1950 to present). From an

archaeological standpoint, all of these phases can be referred to together as the Ethnohistoric Period. This provides a valuable tool for archaeologists, as ethnohistory is directly concerned with the study of indigenous or non-Western peoples from a combined historical/anthropological viewpoint, which employs written documents, oral narrative, material culture, and ethnographic data for analysis.

European exploration along the California coast began in 1542 with the landing of Juan Rodríguez Cabrillo and his men at San Diego Bay. 60 years after the Cabrillo expeditions, an expedition under Sebastian Vizcaíno made an extensive and thorough exploration of the Pacific coast. Although the voyage did not extend beyond the northern limits of the Cabrillo track, Vizcaíno had the most lasting effect upon the nomenclature of the coast. Many of his place names have survived, whereas practically every one of the names created by Cabrillo have faded from use. For instance, Cabrillo named the first (now) United States port he stopped at "San Miguel"; 60 years later, Vizcaíno changed it to "San Diego" (Rolle 1969). The early European voyages observed Native Americans living in villages along the coast but did not make any substantial, long-lasting impact. At the time of contact, the Luiseño population was estimated to have ranged from 4,000 to as many as 10,000 individuals (Bean and Shipek 1978; Kroeber 1976).

The historic background of the project area began with the Spanish colonization of Alta California. The first Spanish colonizing expedition reached southern California in 1769 with the intention of converting and civilizing the indigenous populations, as well as expanding the knowledge of and access to new resources in the region (Brigandi 1998). As a result, by the late eighteenth century, a large portion of southern California was overseen by the Spanish at Mission San Luis Rey (San Diego County), Mission San Juan Capistrano (Orange County), and Mission San Gabriel (Los Angeles County), who began colonization of the region and surrounding areas (Chapman 1921).

Up until this time, the only known way to feasibly travel from Sonora to Alta California was by sea. In 1774, Juan Bautista de Anza, an army captain at Tubac, requested and was given permission by the governor of the Mexican State of Sonora to establish an overland route from Sonora to Monterey (Chapman 1921). In doing so, Juan Bautista de Anza passed through

Riverside County and described the area in writing for the first time (Caughey 1970; Chapman 1921). In 1797, Father Presidente Lassuén (of Mission San Diego de Alcalá), Father Juan Norberto de Santiago, and Corporal Pedro Lisalde (of Mission San Juan Capistrano) led an expedition through southwestern Riverside County in search of a new

mission site to establish a presence between San Diego and San Juan Capistrano (Engelhardt 1921). Their efforts ultimately resulted in the establishment of Mission San Luis Rey in Oceanside, California.

Through the mission system, the Spanish gained power through the support of a large, subjugated Native American workforce. The subjugation also included assigning labels to the Native population as it relates to the mission they were located at. As such, many of the names used for the Native groups in the area and later by ethnographers are not the original names the people had called themselves. As the missions grew, livestock holdings increased and became increasingly vulnerable to theft. In order to protect their interests, the southern California missions began to expand inland to try and provide additional security (Beattie and Beattie 1939; Caughey 1970). In order to meet their needs, the Spaniards embarked on a formal expedition in 1806 to find potential locations within what is now the San Bernardino Valley. As a result, by 1810, Father Francisco Dumetz of Mission San Gabriel had succeeded in establishing a religious site, or capilla, at a Cahuilla rancheria called Guachama (Beattie and Beattie 1939). San Bernardino Valley received its name from this site, which was dedicated to San Bernardino de Siena by Father Dumetz. The Guachama rancheria was located in present-day Bryn Mawr in San Bernardino County.

These early colonization efforts were followed by the establishment of estancias at Puente (circa 1816) and San Bernardino (circa 1819) near Guachama (Beattie and Beattie 1939). These efforts were soon mirrored by the Spaniards from Mission San Luis Rey, who in turn established a presence in what is now Lake Elsinore, Temecula, and Murrieta (Chapman 1921). The indigenous groups who occupied these lands were recruited by missionaries, converted, and put to work in the missions (Pourade 1961). Throughout this period, the Native American populations were decimated by introduced diseases, a drastic shift in diet resulting in poor nutrition, and social conflicts due to the introduction of an entirely new social order (Cook 1976).

Mexico achieved independence from Spain in 1822 and became a federal republic in 1824. As a result, both Baja and Alta California became classified as territories (Rolle 1969). Shortly thereafter, the Mexican Republic sought to grant large tracts of private land to its citizens to begin to encourage immigration to California and to establish its presence in the region. Part of the establishment of power and control included the desecularization of the missions circa 1832. These same missions were also located on some of the most fertile land in California and, as a result, were considered highly valuable. The resulting land grants, known as “ranchos,” covered expansive portions of California and by 1846,

more than 600 land grants had been issued by the Mexican government. Rancho Jurupa was the first rancho to be established and was issued to Juan Bandini in 1838. Although Bandini primarily resided in San Diego, Rancho Jurupa was located in what is now Riverside County (Pourade 1963). A review of Riverside County place names quickly illustrates that many of the ranchos in Riverside County lent their names to present-day locations, including Jurupa, El Rincon, La Sierra, El Sobrante de San Jacinto, La Laguna (Lake Elsinore), Santa Rosa, Temecula, Pauba, San Jacinto Nuevo y Potrero, and San Jacinto Viejo (Gunther 1984). As was typical of many ranchos, these were all located in the valley environments within western Riverside County.

The treatment of Native Americans grew worse during the Rancho Period. Most of the Native Americans were forced off of their land or put to work on the now privately owned ranchos, most often as slave labor. In light of the brutal ranchos, the degree to which Native Americans had become dependent upon the mission system is evident when, in 1838, a group of Native Americans from Mission San Luis Rey petitioned government officials in San Diego to relieve suffering at the hands of the rancheros:

> We have suffered incalculable losses, for some of which we are in part to be blamed for because many of us have abandoned the Mission ... We plead and beseech you ... to grant us a Rev. Father for this place. We have been accustomed to the Rev. Fathers and to their manner of managing the duties. We labored under their intelligent directions, and we were obedient to the Fathers according to the regulations, because we considered it as good for us. (Brigandi 1998:21)

Native American culture had been disrupted to the point where they could no longer rely upon prehistoric subsistence and social patterns. Further, many Native Americans had their traditional lands taken from them and moved to land that was not adequate for them to maintain their lifeways. Not only does this illustrate how dependent the Native Americans had become upon the missionaries, but it also indicates a marked contrast in the way the Spanish treated the Native Americans compared to the Mexican and United States ranchers. Spanish colonialism (missions) is based upon utilizing human resources while integrating them into their society. The Mexican and American ranchers did not accept Native Americans into their social order and used them specifically for the

extraction of labor, resources, and profit. Rather than being incorporated, they were either subjugated or exterminated (Cook 1976).

By 1846, tensions between the United States and Mexico had escalated to the point of war (Rolle 1969). In order to reach a peaceful agreement, the Treaty of Guadalupe Hidalgo was put into effect in 1848, which resulted in the annexation of California to the United States. Once California opened to the United States, waves of settlers moved in searching for gold mines, business opportunities, political opportunities, religious freedom, and adventure (Rolle 1969; Caughey 1970). By 1850, California had become a state and was eventually divided into 27 separate counties. While a much larger population was now settling in California, this was primarily in the central valley, San Francisco, and the Gold Rush region of the Sierra Nevada mountain range (Rolle 1969; Caughey 1970). During this time, southern California grew at a much slower pace than northern California and was still dominated by the cattle industry that was established during the earlier rancho period. However, by 1859, the first United States Post Office in what would eventually become Riverside County was set up at John Magee's store on the Temecula Rancho (Gunther 1984).

During the same decade, the Native Americans of southern Riverside County, including the Cahuilla, Cupeño, Luiseño, and Serrano, thought they had signed a treaty resulting in their ownership of all lands from Temecula to Aguanga east to the desert, including the San Jacinto Valley and the San Gorgonio Pass. Milanovich (2021) notes that "The treaty commissioners told the tribal leaders to sign the treaties, or face annihilation through war, settlement, relocation, and forced removal." The Treaty of Temecula was signed on January 5, 1852, while a similar treaty known as the Treaty of Santa Ysabel was signed with the Kumeyaay two days later (Milanovich 2021). However, Congress never ratified these treaties, and the promises laid out in them were rejected during a "secret session" (Brigandi 1998; Milanovich 2021). As a result, Native Americans were able to be evicted from their lands which were desired by American citizens.

"The United States chose not to act on the issue until twenty-three years later when President

Ulysses S. Grant began to establish reservations through executive orders in Southern California"

(Milanovich 2021). With the completion of the Southern Pacific Railroad in 1869, southern California saw its first major population expansion. The population boom continued circa 1874 with the completion of connections between the Southern Pacific Railroad in

Sacramento to the transcontinental Central Pacific Railroad in Los Angeles (Rolle 1969; Caughey 1970). The population influx brought farmers, land speculators, and prospective developers to the region. As the Jurupa area became more and more populated, circa 1870, Judge John Wesley North and a group of associates founded the city of Riverside on part of the former rancho.

Although the first orange trees were planted in Riverside County circa 1871, it was not until a few years later when a small number of Brazilian navel orange trees were established that the citrus industry truly began in the region (Patterson 1971). The Brazilian navel orange was well suited to the climate of Riverside County and thrived with assistance from several extensive irrigation projects. At the close of 1882, an estimated half a million citrus trees were present in California. It is estimated that nearly half of that population was in Riverside County. Population growth and 1880s tax revenue from the booming citrus industry prompted the official formation of Riverside County in 1893 out of portions of what was once San Bernardino County (Patterson 1971).

Shortly thereafter, with the start of World War I, the United States began to develop a military presence in Riverside County with the construction of what would become March Air Reserve Base. March Air Reserve Base was established on March 1, 1918 as the Alessandro Flying Training Field after the United States entered World War I (Gunther 1984). The name was officially changed to March Field on March 20, 1918 in honor of Peyton C. March, Jr., who had been killed in a training plane crash in Fort Worth, Texas, earlier that year. The air field continued to change names, including: March Army Air Field in 1941; March Army Air Base in 1942; March Army Air Force Base (to reflect the establishment of the United States Air Force) in 1947; and March Air Reserve Base in 1996 (March Field Air Museum n.d.).

In the decades that followed, populations spread throughout the county into Lake Elsinore, Corona, Norco, Murrieta, and Wildomar. However, a significant portion of the county remained largely agricultural well into the 1970s. Following the 1970s, Riverside saw a period of dramatic population increase as the result of new development, more than doubling the population of the county with a population of over 1.3 million residents (Patterson 1971).

General History of the City of Calimesa

The project is located within the city of Calimesa near the boundary with the city of Yucaipa and the County of San Bernardino. The cities of Yucaipa and Calimesa began as

small rural towns comprised mostly of single-family homes and ranches (City of Calimesa 2014). Although Calimesa focused upon various different crops, grapes and olives were among the first to be heavily cultivated. In 1890, several hundred olive trees were planted by Stephen Covington along the South Bench area (White and White 2005). In 1916, an additional 1,500 trees were planted by Keeland and Bise on Grape Hill Ranch, located on the west end of County Line Road (*Yucaipa News* 1916). These orchards were referred to as the "South Mesa orchards" (White and White 2005).

When State Route 99 (Interstate 10) was completed in the 1920s, Yucaipa and Calimesa, separated by the county boundary, began to grow. In 1929, Calimesa was distinctly created at the request of businessman Harry Sheppard (who later represented the area in Congress). Sheppard had sought to establish a post office close to his business near the intersection of County Line Road and Route 99 because he was unsatisfied with the service of the post office that had been responsible for delivering his mail. The request was granted in 1929, and through a contest organized by the Yucaipa Chamber of Commerce, Margaret Church coined the name of Calimesa for the new post office (Gunther 1984).

Both Yucaipa and Calimesa were incorporated fairly recently (Yucaipa in 1989 and Calimesa in 1990). Both cities incorporated all land between their city centers and the county line so as not to leave any unincorporated land between the two cities.

General History of the Project Vicinity

The project is located within San Timoteo Canyon with much of the project acreage within an unsectioned area formally known as the "Tract Between San Jacinto and San Gorgonio." Further, the property history is primarily linked to the Singleton Family. In support of the

SROVSP, LSA Associates (LSA) studied the subject property and surrounding area (Lawson et al 2004). The following are excerpts of the relevant historic context sections developed by LSA for the project vicinity in support of the SROVSP[1]:

> **Rancho San Timoteo**. This tract of land, originally named as one league in size was granted to James (Santiago) Johnson in 1842. Two years later, Johnson sold the Rancho to Louis Roubidoux (Rubidaux) (Beattie and Beattie 1951) who used it

[1] : For more detailed history of the Singletons and early settlers of the area see McLean et al 2006.

primarily for sheep ranching (Frink 1936). The tract (then thought to be about 400 acres) was deeded to James Singleton on September 23, 1870. In March 1871, the land was surveyed and determined to be just over 4,400 acres in size. The land was not patented until August 2, 1872, five years after Roubidoux's death (U.S. GLO 1871) and Singleton officially received the legal title in August of 1872. Singleton promptly sold the southern portion of

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the tract to Newton Noble, the county sheriff, retaining the northern portion of the tract for himself (Strickland 2000; Christian 2002). The Oak Valley Specific Plan Amendment area is located within the northern 1/3 of the Rancho. (Lawson et al. 2004)

The Singletons. James Singleton, his wife, Ann, and their two children William and Ann arrived in San Timoteo Canyon in 1857 from Salt Lake, Utah. In 1870, James Singleton purchased the 4,400-acre Mexican land grant, the Tract between San Jacinto and San Gorgonio, from Louis Rubidoux. Singleton and his family, however, had already moved onto the land by 1871, as a residence marked 'Singleton' is located on an 1871 survey map. The location of their original house is just south of "the Old Road from Gucaypa to San Gorgonio Plains" near what is now Roberts Road (U.S. GLO 1871). The majority of the Oak Valley Specific Plan 1 Amendment is located within this original tract. When the tract was surveyed in 1871 and determined to be 4,400 acres instead of 400, many of the earliest settlers were forced off the land or made tenants of the land they had lived on and improved for many years. Singleton also appropriated all of the water in San Timoteo Creek, an act which brought upon him an 1880s lawsuit by ranch owners below the grant, resulting in a ruling that allowed Singleton and Haskell five days use of the water, with other ranchers sharing the other five days (Frink 1936; Christian 2002; Strickland 2000).

In the 1870s, James Singleton built a large two-story frame house for his family, where he resided until his death in 1881. In about 1897 daughter Ann's son Will built a one-and-one-half story frame residence at the junction of the Woodhouse/Singleton Road where a road turned south to the Noble/Clough Ranch. When Will Singleton and his halfbrother James Haskell purchased the adjoining ranch from the Clough family in 1911, the house was moved across the fields on logs to what is now known as the Haskell Ranch. In the 1920s, after the death of his

mother, Will Singleton moved yet again. This time, he moved easterly across the hills to the site of the original Singleton ranch house, on present

Roberts Road. There he built a Craftsman house and barn (LSA-SUC337-S-6 [P-33-

015000]), surrounded by agricultural fields and an irrigation system (Nara Haskell 2004).

The Woodhouse Family. In 1927, the western portion of the Singleton Ranch, in San Timoteo Canyon, was sold to the Woodhouse family. A new frame residence, covered with "slab-logs," was built. The 1870s James Singleton residence was torn down and the lumber and other architectural features used to construct two guest houses on the ranch, all north of the original ranch house. Woodhouse grew grain and ran cattle, but did not work the land (Nara Haskell 2004).

The Southern Pacific Railroad. The Southern Pacific Railroad, which runs along the southern boundary of the project area [west of the current Summerwind SPA Project property], was constructed in the 1870s. It originally ran from Los Angeles through Norwalk and Buena Park, through Pomona to Colton, through San Timoteo Canyon and on through San Gorgonio Pass to Yuma. Two railroad sidings are located along this railroad near the boundaries of the project area: El Casco and Alexis (later known as Hinda). El Casco and Alexis/Hinda apparently were in use during the late 1800s, as both sidings appear on the Elsinore 1901 map. The El Casco station had the only artesian well on the entire Southern Pacific Railroad line (Gunther 1984).

Water Conveyance Systems. Low rainfall during the non-growing seasons necessitated good water management for southern California farmers and ranchers. The first water conveyance systems in southern California area were built by Spanish and Mexican missionaries. By the late 1800s, a number of water companies and conveyance systems were centered around San Bernardino, Riverside, Ontario, Etiwanda, and settlements to the west and south (Crawford et al. 2000).

A variety of techniques was utilized to manage water. Early irrigation canals relied on gravity to move water; only lands lying below these flow control systems

could be serviced. Later systems utilized pumps. Early pipe was constructed of hollowed out logs. During the 19th century, riveted iron pipe was preferred to steel pipe for low-pressure applications such as irrigation. Southern California mutual water companies utilized both metal and concrete pipes for water distribution as early as the late 1800s. Temporary weirs made of brush and loose rock were more commonly found associated with smaller water delivery systems developed before the late 1800s. Historically, wood and masonry (mortared cobble) weirs were commonly used (Crawford et al. 2000), followed by poured concrete 'box' weirs connected to pre-fabricated concrete standpipe irrigation systems beginning in the first decades of the 20th century.

Water management systems were implemented during the latter half of the 19th century on the Singleton Ranch. A rock and mortar-lined tunnel was constructed on the Ranch connecting two unnamed creek drainage systems. According to a rancher with property south of Singleton Ranch, this tunnel was constructed by Chinese laborers just after the beginning of the American Era (1860s). Most of the system, however, was built by James Singleton and his descendants to irrigate fields and transport water to the ranches in San Timoteo Canyon by a system of wells, pumps, reservoirs, dams, weirs, ditches, pipes, and other flow control devices. The system provided water to the Haskell Ranch and others through the 1960s, and possibly later (Nara Haskell 2004). In 1982, the badly eroded tunnel was apparently still in use to channel rainwater (Schroth 1981). (Lawson et al. 2004)

3.3 Applicable Regulations

The cultural resources study for Summerwind SPA Project followed the appropriate local and state protocols and procedures for this type of study. Statutory requirements of CEQA and subsequent legislation (Section 15064.5), as well as the guidelines for the city of Calimesa, was followed in evaluating the significance of identified cultural resources. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO 1995).

3.3.1 California Environmental Quality Act

According to CEQA, Section 15064.5(a), the term “historical resource” includes the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] SS5024.1, Title 14 CCR. Section 4850 et seq.).
2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (PRC SS5024.1, Title 14, Section 4852), including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) 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 values; or
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

4) The fact that a resource is not listed in, or determined eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1[g] of the PRC), does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

According to CEQA, Section 15064.5(b), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect upon the environment. CEQA defines a substantial adverse change as:

1) Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.
2) The significance of a historical resource is materially impaired when a project:

    a) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR; or,
    b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or,
    c) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for the purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects upon archaeological sites and contains the following additional provisions regarding archaeological sites:

1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is a historical resource, as defined in Subsection (a).
2) If a lead agency determines that the archaeological site is a historical resource, it shall refer to the provisions of Section 21084.1 of the PRC, Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the PRC do not apply.

3) If an archaeological site does not meet the criteria defined in Subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in PRC Section 21083.2(c) to (f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4) If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project upon those resources shall not be considered a significant effect upon the environment. It shall be sufficient that both the resource and the effect upon it are noted in the Initial Study or Environmental Impact Report, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, Subsection (d) provides:

(d) When an Initial Study identifies the existence, or probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC) as provided in PRC SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
2) The requirements of CEQA and the Coastal Act.

3.4 Research Design

The primary goal of the research design is to attempt to understand the way in which humans have used the land and resources within the project area through time, as well as to aid in the determination of resource significance. For the current project, the study area under investigation is the western portion of Riverside County. The scope of work for the

archaeological program conducted for the Summerwind SPA Project included the survey of an approximately 858-acre area. Given the area involved and the narrow focus of a Phase I survey, the research design for this project was limited and general in nature. Since the main objective of the investigation was to identify the presence of, and potential impacts to, cultural resources, the goal here is not necessarily to answer wide-reaching theories regarding the development of early southern California, but to investigate the role and importance of the identified resources. Nevertheless, the assessment of the significance of a resource must take into consideration a variety of characteristics, as well as the ability of the resource to address regional research topics and issues.

Although survey-level investigations are limited in terms of the amount of information available, several specific research questions were developed that could be used to guide the initial investigations of any observed cultural resources. The following research questions take into account the small size and location of the project area discussed above.

Research Questions:

- Can located cultural resources be situated with a specific time period, population, or individual?
- Do the types of located cultural resources allow a site activity/function to be determined from a preliminary investigation? What are the site activities? What is the site function? What resources were exploited?
- How do the located sites compare to others reported from different surveys conducted in the area?
- How do the located sites fit existing models of settlement and subsistence for valley environments of the region?

Data Needs

At the survey level, the principal research objective is a generalized investigation of changing settlement patterns in both the prehistoric and historic periods within the study area. The overall goal is to understand settlement and resource procurement patterns of the project area occupants. Therefore, adequate information on site function, context, and chronology from an archaeological perspective is essential for the investigation. The fieldwork and archival research were undertaken with the following primary research goals in mind:

1) To identify cultural resources occurring within the project area;
2) To determine, if possible, site type and function, context of the deposit, and chronological placement of each cultural resource identified;
3) To place each cultural resource identified within a regional perspective; and
4) To provide recommendations for the treatment of each of the cultural resources identified.

4.0 METHODOLOGY

The archaeological assessment conducted for the Summerwind SPA Project consisted of a Phase I reconnaissance and site inventory for the property by qualified archaeologists and an institutional records search. This archaeological study conformed to CEQA for survey level and inventory studies.

4.1 Archaeological Records Search

The records search conducted by the EIC at UCR was reviewed for an area of one mile surrounding the project in order to determine the presence of any previously recorded sites. Results of the records search are provided in Appendix C and discussed in Section 5.1. BFSA also reviewed project documents for the previously developed SROVSP as well as current information regarding the current on-going development of the OVTC Project directly southeast of the Summerwind SPA property. In addition, the BFSA research library was consulted for any relevant historical information.

4.2 Field Methodology

The archaeological survey of the property was conducted between May 18, June 14,and August 10, 2023. The survey included a series of parallel transects spaced at approximately 15meter intervals, that were prohibited by steep slopes, to locate cultural resources within the project. The entire 858 acre project was included in the survey process. Ground visibility throughout the property was characterized as very poor, due primarily to dense vegetation found throughout the property. Where possible, rodent spoil piles and alluvial cuts were closely inspected for evidence of archaeological materials.

Given the poor ground visibility and the project vicinity's sensitivity for cultural resources the study also included surface scrapes as part of the overall survey program. The surface scrapes were employed to remove vegetation to provide an obstructed view of the ground surface. In addition to the removal of vegetation the upper 30-60 cm of the upper alluvial soil was removed and examined by way of shovel probe at each surface scrape location. In total 200 surface scrapes (SS-1 through SS-200) were conducted. The surface scrapes measured one meter by one meter and were placed throughout the property. The locations of all surface scrapes and any identified cultural resources were

mapped via GPS. All field data was recorded on appropriate forms, and photographs were used to document the excavations.

4.3 Native American Consultation

BFSA also requested a SLF search from the NAHC to search for the presence of any recorded Native American sacred sites or locations of religious or ceremonial importance within one mile of the project. This request is not part of any official Native American consultation. The SLF search has been returned with positive results for potential sites or locations of Native

American importance within the vicinity. The NAHC suggested contacting the Morongo Band of Mission Indians further for information. Any additional tribal outreach will be conducted by the lead agency under the official Native American consultation process. All correspondence is provided in Appendix D.

4.4 Report Preparation and Recordation

This report contains information regarding previous studies, statutory requirements for the project, a brief description of the setting, research methods employed, and the overall results of the survey and testing program. The report includes all appropriate illustrations and tabular information needed to make a complete and comprehensive presentation of these activities, including the methodologies employed and the personnel involved. A copy of the final technical report will be placed at the EIC at UCR. Any newly recorded sites or sites requiring updated information will be recorded on the appropriate DPR forms, which will be filed with the EIC.

5.0 REPORT OF FINDINGS

5.1 Results of the Institutional Records Searches and Research

An archaeological records search was conducted utilizing data obtained from the EIC, information on-file with the City of Calimesa for the SROVSP, and any relevant current OVTC data. The results of the records search (Appendix C) indicate that 48 cultural resources (four prehistoric, three multicomponent, and 41 historic) have been recorded within one mile of the subject property. Eleven of the resources (10 historic and one prehistoric) are within the Summerwind SPA Project, while two additional historic resources are located directly adjacent to the subject property. The remaining prehistoric resources consist of one bedrock milling site, one lithic scatter, and one isolate. Two of the multicomponent sites contain prehistoric and historic artifact scatters. The third multicomponent site consists of a historic Native American village and cemetery along with the historic El Casco Schoolhouse site. The historic resources consist of structures, sites, and features primarily associated with the historic agricultural land use of the San Timoteo Canyon. Table 5.1–1 provides a brief description of each resource including the two adjacent resources and a detailed discussion of the 11 resources recorded within the Summerwind SPA property, and Figure 5.1–1 illustrates the location of the resources recorded within the subject property.

Table 5.1–1

Cultural Resources Located Within One Mile of the Summerwind SPA Project

Site(s)	Description
P-33-000179	Multicomponent (historic Native American village and cemetery as well as the site of the historic El Casco Schoolhouse)
P-33-000794	Multicomponent (prehistoric and historic artifact scatter)
P-33-002262	Historic Vanderventer Ranch complex
P-33-003183	Prehistoric bedrock milling site
P-33-004115	Historic foundations with associated metal scatter and well platform

P-33-007294	Historic Silas Cox Ranch
P-33-007295	Historic Haskell Ranch complex
P-33-007296 *†	Historic James Singleton/Woodhouse Ranch complex
P-33-009476	Historic Noble Ranch structure (California Point of Interest)
P-33-009498	Union Pacific Railroad/Southern Pacific Railroad
P-33-010791	Prehistoric lithic scatter
P-33-012641	Historic isolate
P-33-012642	Historic isolate
P-33-013428	Historic irrigation system
P-33-013713	Historic Sandalwood Ranch complex
Site(s)	**Description**
P-33-013714*	Historic Cirivello Ranch complex
P-33-013715*	Historic foundations
P-33-013716*	Historic Sunbar Ranch complex
P-33-013717	Historic single-family residence
P-33-013718	Multicomponent (prehistoric and historic artifact scatter)
P-33-013719 *	Historic single-family residence
P-33-013720	Historic single-family residence
P-33-013721*	Historic single-family residence
P-33-013722	Historic structural debris
P-33-013723	Historic isolate
P-33-013724	Prehistoric isolate
P-33-013993	Historic water retention features
P-33-013995	Historic foundation
P-33-014135	Historic adobe buildings and trash scatter (originally recorded as part of P-33-007295)
P-33-014866	Historic trash scatter
P-33-014868	Historic ancillary ranch buildings
P-33-014999*†	Historic trash scatter
P-33-015000†	Historic Singleton residence and farm complex
P-33-015001*†	Historic trash scatter
P-33-0150002*†	Historic Singleton Ranch irrigation features

P-33-0150003†	Historic isolated farm equipment
P-33-0150004*	Proposed Historic Singleton Ranch district
P-33-015035	Historic Chino-Hayfield 200kV transmission line
P-33-015299	Historic isolate
P-33-015300	Historic transmission line
P-33-015720 (Adjacent)	Historic San Timoteo Canyon Road
P-33-020420 (Adjacent)	Historic trash scatter
P-33-022344	Historic check dam
P-33-23484	Historic Southern California Edison - Memphis 12kV transmission line
P-33-023964	Historic road
P-33-023966	Historic fence line
P-33-023967	Historic fence line
Site 5*	Prehistoric artifact scatter

**Within the Summerwind SPA Project*
† *Noted as a contributor to P-33-0150004*

Figure 5.1–1

Cultural Resource Location Map

(Deleted for Public Review; Bound Separately)

Resources Recorded within the Summerwind SPA Project

- **Site P-33-007296** is primarily situated adjacent to the Summerwind SPA Project within an area slated for open space. Although none of the buildings at the site are located within the Summerwind SPA Project, the boundaries of the resource, as drawn on the site form, just extend into the current project. The site is the James Singleton/Woodhouse Ranch complex and was originally recorded in 1983 by Nora Haskell (Lawson et al. 2004). "The oldest buildings in this complex were built in 1900" (Lawson et al. 2004). In 2004 Lawson et al. noted that "There are three residences and five remaining farm outbuildings remaining at this site" (Lawson et al. 2004). The buildings were noted by Goodwin and Marvin (2004) on the site form as:

    - Building A: Singleton Residence (National Folk-style farmhouse) ○ Building B: Sunnyslope Ranch house (National Folk-style with split-log siding)
    - Building C: Secondary Residence (National Folk-style with horizontal board siding)
    - Building D: Collapsed barn ○ Building E: Collapsed shed ○ Building F: Shed/one car garage ○ Building G: Pump shed ○ Building H: Silos

    The site was evaluated in 2004 as potentially eligible for the CRHR as "The ranch and its buildings are associated with the Singleton family (CRHR Criterion B), as well as the continuity of agriculture and ranching in the area from the late 19th into the 20th century (CRHR Criterion A)" (Goodwin and Marvin 2004).

    In an additional study of the site, McLean et al. (2006, 2008a) conducted extensive research on the Singleton family and surrounding ranch holdings. Based upon this research McLean et al originally determined that two adobes (the Pine/Humphrey Adobe and the Lovetta Adobe) were located either near or within the Site P-33-007296 boundaries as illustrated on the 1872 GLO Map (McLean et al. 2006; 2008a). The Pine adobe is noted by McLean et al. as being constructed by Samuel Pine sometime between 1851 and 1860 (2006; 2008a). This adobe was later sold to Smith Humphry between 1860 and 1862.

Humphrey moved his family into the adobe, residing there until the San Timoteo Ranch was surveyed, and James Singleton forced off or made tenants of the settlers who believed they had established their homesteads on government land.

Little is known about Diego Lovetta's tenure on the property. Lovetta was born in Mexico and is listed as having resided in San Timoteo Canyon in 1870, with $1,000 in personal property. His residence is mapped on the 1872 Goldsworthy map of San Timoteo Canyon. It is unknown exactly how long he resided in the canyon; he is assessed for property until at least 1874, when he is documented as having been delinquent by $394. By 1880, it appears that Lovetta no longer resided in San Timoteo Canyon. (McLean et al. 2006; 2008a)

When the property was acquired by Woodhouse, it was reported that the adobe had been covered with wood to preserve it. McLean et al noted that it was apparent an adobe had been expanded and built upon for the Sunnyslope Ranch house and postulated that it likely was remnants of the Pine/Humphry adobe. However, it is not clear as this location does not match that shown for any of the adobes on the 1867 GLO map. Further, a review of recent aerial photographs indicates that the Sunnyslope Ranch house, along with all other structures at the site, except for the silos, burned down in 2020 and are no longer extent.

- **Site P-33-013714** was recorded by Riordan Goodwin in 2004 as the remains of a horse ranch complex (Goodwin 2004a; Lawson et al. 2004). At the time of recordation, the site contained various buildings (buildings A though F) and additional features. The building and features were all documented in various states of disrepair and described as:

    - Building A: standing shed converted to worker's cottage with screened-in porch, later large plywood walk-in refrigerated storage 'cube' installed

- Building B: standing shed in poor condition ○ Building C: collapsed open shed/animal pen(s) with workshop ○ Building D: collapsed open shed (possible hay barn)
- Building E: large concrete storehouse/warehouse slab with adjacent collapsed stable or covered storage
- Building F: standing stable in poor condition with later addition ○ Building G: collapsed early shed with later addition
- Features include a concrete slab foundation, breeze way/manger, associated rubble/debris pile, water conveyance system remnants (a reservoir and prefabricated concrete canal segments), corral/fence line and landscaping remnants (cypress, palm, and eucalyptus trees) (Goodwin 2004a)

Goodwin found elements of the resource were first constructed during the 1920s with additions and modifications occurring through the 1970s. The resource was evaluated as not eligible for the CRHR due to a lack of sufficient integrity (Goodwin 2004a). In 2012 Steph Velasquez added the remnants of a reservoir and wooded dock/pier constructed between 1965 and 1967 to the site record. Only buildings E, F, and G are located within the Summerwind SPA Project boundaries.

- **Site P-33-013715** was recorded by Riordan Goodwin in 2004 as the remains of a residence and ancillary building constructed prior to 1938 (Goodwin 2004b). "Features identified at the site include a rock chimney, mortared with concrete; concrete slab and foundation footing for a detached garage or shed, concrete steps, low landscaping wall, poured concrete retaining wall, and metal water tank converted for storage use" (Goodwin 2004b). The resource was evaluated as not eligible for the CRHR (Goodwin 2004b; Lawson et al. 2004).

- **Site P-33-013716** was recorded by Riordan Goodwin and Judith Marvin in 2004 as the Sunbar Ranch constructed between the 1930s and 1950s. In 2004 Goodwin and Marvin described the buildings and features as:

    - Building A: garage/shed of similar construction and style as residence with attached animal pen
    - Building B: possible workshop ○ Building C: water tank shed ○ Building D: workshop, barn, and chicken coop

- Building E: elevated egg hatchery and divided feed hopper over a concrete manger with apron
- Building F: open hay barn ○ Building G: collapsed early shed with later addition
- Features include a cattle chute, concrete feed and watering troughs, slabs, wood stockpiles, miscellaneous farm equipment, remnants and corral/fence line remnants.

The site was evaluated by Goodwin and Marvin as not eligible for the CRHR in 2004 (Lawson et al. 2004). The resource was updated in 2022 in support of a Section 106 Study also conducted by LSA (2022). The 2022 study found the residence and garage had been removed from the site while five previously unrecorded features were identified (Features H through L). Features H through K are water conveyance features while Feature L is a utility pole with 1945, 1949, and 2005 inspection nails. The 2022 study of the site found the resource not eligible for the NRHP (Collision et al 2022). As such this resource has been evaluated as not eligible for the CRHR and the NRHP (Goodwin and Marvin 2004; Lawson et al. 2004; Collision et al. 2022).

- **Site P-33-013719** was recorded by Riordan Goodwin in 2004. The resource primarily is recorded adjacent to the Summerwind SPA Project, within the OVTC property, with only a small portion of the site extending into the subject property. The site was recorded as a wood-framed Ranch Style residence constructed in 1955. The resource was evaluated as not eligible for the CRHR (Goodwin 2004c; Lawson et al. 2004).

- **Site P-33-013721** was recorded by Riordan Goodwin in 2004 as a "rural residence with a detached garage constructed in 1950, with an associated driveway and parking lot" (Collision et al. 2022). The resource was evaluated as not eligible for the CRHR (Goodwin
  2004d; Lawson et al. 2004). The resource was updated in 2022 in support of a Section 106 Study (Collision et al. 2022). The 2022 study of the site found the resource not eligible for the NRHP (Collision et al 2022). As such this resource has been evaluated as not eligible for the CRHR and the NRHP (Goodwin 2004d; Collision et al. 2022).

- **Site P-33-014999** was recorded by Goodwin in 2004. The site is described as a 120-by90-foot historic trash scatter located along the northern shoulder of a dirt access road. The site was described as in poor condition due to its proximity to the dirt road. Also, through erosion some artifacts had become partially buried. "Pre-1959 constituents include concrete irrigation pipe sections (6-inch and 12-inch diameter) associated with the historic water conveyance system, black sheet metal, 50-gallon drum fragments, large painted tub or trough, round 5-gallon tar can, appliance or auto sheet metal, and square fuel cans" (Goodwin 2004e; Lawson et al. 2004).

- **Site P-33-015001** was recorded by Goodwin in 2004. The site is described as a farily undisturbed dump site consisting of two loci. The site was documented as measuring 120 by 70 feet and displaying artifacts partially buried through erosion. Artifacts at this site were noted to:

  > appear to date to the early 1900s. Artifacts include 1920s auto body elements, church-key opened beverage can, galvanized buckets, square fuel cans, steel rim for a wooden auto wheel with a 2-foot diameter, miscellaneous metal can fragments, improvised bucket, soldered steel square, one set of carriage leaf springs, more square fuel cans, a galvanized wash tub, barrel hoops, miscellaneous metal trays, a kerosene lantern part, and other miscellaneous historic trash. The northern boundary of the site appears to be the base of a hill and appears to encompass most of the small valley up to and including a small wash leading out of the main valley. (Goodwin 2004f; Lawson et al. 2004)

- **Site P-33-015002** was recorded by Lawson et al. in 2004 as a series of discontinuous water control features (Feature A through P) utilized for the Singleton Ranch irrigation system. According to Lawson et al. elements of the site began to be utilized "possibly as early as the 1870's and continuing into the 1980's" (2004b). The features documented by Lawson et al. are scattered about approximately 1,328.5 acres. As such, only Feature B, an earthen dam and reservoir, and Feature H, a collection of steel pipes, were recorded within the Summerwind SPA Project boundaries. The site form for the resource states, that Feature B "appears to be constructed entirely of earth by bulldozer or other modern excavation equipment." Further, Feature H was

described as having "no integrity as it has been moved from its original location." Although Lawson et al. stated that the features were "unlikely to be individually eligible for inclusion in the California Register" the features were collectively included as a contributing element to the Singleton Ranch District (Site P-33015004 discussed below) which was evaluated as potentially eligible for the CRHR (2004).
Lawson et al. noted that:

> The primary data potential of this system rests in identifying and mapping its various segments and features and their connecting elements. Understanding the local development of water is key to reconstructing land-use patterns and locations of associated fields and features. Future recording of additional portions of this system (i.e., on the Haskell and adjoining ranches) as they are encountered in various projects, along with relevant historic research, will result in a comprehensive documentation of this important system, which once extended as far north as El Casco and served various ranches along its route.

To mitigate any potential impacts to Site P-33-015002 the MMRP for the SROVSP requires focused surveys along with detailed research and recordation of each feature to deterimine significance (EDAW, Inc. 2005).

- **Site P-33-015004** was recorded by Goodwin et al. in 2004 as the Singleton Ranch District and includes "all architectural and archaeological resources identified with the historic Singleton/Woodhouse Ranch, dating from the 1870's through the 1950s" (Lawson et al.
2004). Contributing elements to this proposed district include the James

  Singleton/Woodhouse Ranch (P-33-007296), and the Will Singleton Ranch (P-33015000), two associated historic trash scatters (P-33-014999 and P-33-015001), an isolated piece of farm equipment (P-33-015003), and an extensive irrigation and water distribution system (P-33-015002) that conveyed water to complexes and other areas of the ranch (Goodwin et al. 2004). The two historic trash scatter (P-33-014999 and P-33-015001) as well as the aforementioned Site P-33-015002 Feature B and H, are located within the Summerwind SPA Project. Lawson et al. evaluated the district as potentially eligible for listing in the California Register under Criterion

four, because it contains important information for understanding the past. However, it at the present almost all the contributing buildings have been removed and are no longer extant. Site P-33-015000 was removed for the development of the OVTC and all but the silos at Site P-33-007296 have burned down. Regardless, to mitigate any potential impacts to (P-33-014999 and P-33015001) the MMRP for the SROVSP requires Phase II Excavations at the trash scatters to further evaluate the resources (EDAW, Inc. 2005).

- **Site 5 (**Trinomial Pending) was identified by Helix in 2022 during mitigation monitoring for the adjacent OVTC Project. The site consists of a prehistoric artifact scatter containing both flaked and ground stone tools. Based upon mitigation efforts conducted by Helix, the site measures approximately 75 by 65 meters and is situated on a ridge extending into the southern portion of the Summerwind SPA Project from the adjacent OVTC Project. To date, Helix has mitigated impacts to the site on both the OVTC and the Summerwind SPA properties through the OVTC MMRP. Helix has conducted a surface collection of all artifacts, subsurface excavation through a series of STPs, and monitored the controlled grading of the resources. No significant subsurface archaeological deposits were recovered by Helix at Site 5 (M. Robbins-Wade [Helix], personal communication, August 2023). All archaeological work conducted within Site 5 on the Summerwind SPA Project was monitored by BFSA field archaeologist John Baber and Native American monitors from the Morongo Band of Mission Indians, the Agua Caliente Band of Cahuilla Indians, the San Manuel Band of Mission Indians, and the Soboba Band of Luiseño Indians.

Resources Recorded adjacent to the Summerwind SPA Project

- **Site P-33-015720** is the San Timoteo Canyon Road situated adjacent to the Summerwind SPA Project. The road was recorded in 2006 by Casey Tibbet. Tibbet evaluated the road as not eligible for the CRHR nor the NRHP. The road was further studied in 2017 by Applied Earthworks (Thomas and Castells 2017). The Applied Earthworks study also found the resource not eligible for the CRHR nor the NRHP.

- **Site P-33-020420** is a historic trash scatter recorded by LSA in 2009 situated on the south side of San Timoteo Canyon Road (Goodwin and Avalos 2009). Although not specified in the site form, it appears the resource was discovered during a

construction monitoring project. The site boundary presented in the site form is large, appears arbitrary, and drawn in a manner where it extends across San Timoteo Canyon Road touching the far southwestern portion of the Summerwind SPA. However, the resource is designated as adjacent to the subject property as no associates artifacts were recovered from within the
Summerwind SPA Project. Regardless, LSA evaluated the resource as not CRHR eligible.

In total, 37 previous studies were identified within a one-mile radius of the project area (see Appendix C). According to the records search, 13 of the previous studies include all or portions of the Summerwind SPA Project (DeCarlo and Winslow 2015; DeCarlo et al. 2015; Eckhardt et al. 2004; Grijalva et al. 2013; Lawson et al. 2004; McLean et al. 2006, 2008a, 2008b, and 2013; Schroth and Cottrell 1981; Smith et al. 1983; Thomas and Castells 2018, Collision et al. 2022) (see Table 5.1–2). Most of these previous studies are tied to large linear transmission line studies or focused primarily on adjacent properties (DeCarlo and Winslow 2015; DeCarlo et al. 2015; Eckhardt et al. 2004; Grijalva et al. 2013; McLean et al. 2008b, and 2013; Smith et al. 1983;

Thomas and Castells 2018). Conversely, the 1983 Schroth and Cottrell study included a survey of 693 acres of the Singleton Ranch. This study overlaps approximately 125 acres of the southeastern portion of the Summerwind SPA Project. Schroth and Cottrell did not identify any resources within the Summerwind SPA Project (1983). The McLean et al. 2006 and 2008a study consisted of a review of various proposed substation locations throughout the San Gorgonio Pass. One proposed location included Site P-33-007296. McLean et al. conducted extensive research on the Singleton family and surrounding ranch holdings. Finally, the Lawson et al. 2004 study again was conducted in support of the SROVSP while the Collision et al. study evaluated sites P-33-013176 and P-33-013721 for the NRHP. The results of the Lawson et al. (2004) and Collision et al (2022) studies are already discussed above.

Table 5.1–2

Previous Studies Conducted Within the
Summerwind SPA Project

Collision, Kerrie, Casey Tibbet, and Riordan Goodwin

2022 Cultural Resources Assessment Report for the Summerwind Trails Phase 2 Project, city of Calimesa, Riverside, California. LSA Associates. Unpublished report on file with the City of Calimesa, California.

DeCarlo, Mathew M. and Diane L. Winslow

2015 Engineering Refinement Survey and Recommendation of Eligibility for Cultural Resources with Southern California Edison Company's West of Devers Upgrade Project, Riverside and San Bernardino Counties, California. ASM Affiliates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

DeCarlo, Matthew M., Diane L. Winslow, Audry Williams, and Andrew Belcourt

2015 Cultural Resource Impact Assessment and Evaluation Status Report for Southern California Edison Company's West of Devers Upgrade Project, Riverside and San Bernardino Counties, California. ASM Affiliates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Eckhardt, William T., Kristen E. Walker, and Richard L. Carrico

2004 Draft Cultural Resources Inventory of the Proposed Vista to Devers Transmission Line, Riverside and San Bernardino Counties, California. Mooney/Hayes Associates LLC. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Grijalva, Daniel, Laura Cowie, and Mandy Parkes

2013 Cultural Resources Inventory for the San Timoteo Creek Reach 3B Habitation Restoration Project, Riverside County, California. Inland Empire Resource Conservation District. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Lawson, Nat, Riordan Goodwin, Curt Duke, and Judith Marvin

2004 Cultural Resource Assessment Oak Valley Specific Plan1 Amendment City of Calimesa Riverside County, California. LSA Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Shannon Carmack, Jay Michalsky, and Judith Marvin

2006 A Study of the Past in San Timoteo Canyon and San Gorgonio Pass: Cultural Resource Assessment Oak Valley Substation Project, Riverside County. LSA Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Rodrick, Shannon Carmack, Jay Michalsky, and Judith Marvin

2008 Final Cultural Resources Assessment, Study of the Past in San Timoteo Canyon and San Gorgonio Pass: Oak Valley Substation Project Riverside County. LSA. Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Shannon Carmack, Phil Fulton, Maria Aron, Jay Michalsky, Daniel Ewers,

Casey Tibbet, and Brook Smith

2008 Supplemental Cultural Resource Assessment, Oak Valley Substation Project, San Bernardino and Riverside Counties. LSA Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

McLean, Roderic, Natalie Brodie, Jacqueline Hall, Shannon Carmack, Phil Fulton, Ingri Quon,

Erin Martinelli, Richard Erickson, and Jay Michalski

2013 Cultural Resources Assessment and Class III Inventory Volume I West of Devers Project San Bernardino and Riverside Counties, California. LSA Associates. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Schroth, Adella and Marie Cottrell

1981 Archaeological Assessment of Singleton Ranch, Near Calimesa Riverside County, California. Archaeological Resource Management Corp. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Smith, Gerald A., R.E. Reynolds, M.K. Lerch, And W.T. Burford

1983 Environmental Studies at the Haskell Ranch, Tentative Parcels 19014 and 19015, San Timoteo Canyon, Riverside County, California. San Bernardino County Museum Association. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

Thomas, Roberta and Justin Castells

2018 Phase I Cultural Resource Assessment for the Beaumont Wastewater Treatment Plant Upgrade/Expansion and Brine Pipeline Project, Riverside and San Bernardino Counties, California. Applied EarthWorks, Inc. Unpublished report on file at the Eastern Information Center at the University of California at Riverside, Riverside, California.

BFSA also reviewed the following historic sources:

- The NRHP Index
- The OHP, Archaeological Determinations of Eligibility
- The OHP, Directory of Properties in the Historic Property Data File
- Historic USGS maps and aerial photographs

These sources did not indicate the presence of any additional historic or prehistoric resources within the project. However, the aerial photographs do show that in 2020 all structures, except for the silos, at Site P-33-007296 had burned and are no longer extent.

BFSA also requested a records search of the SLF from the NAHC. This request is not part of any Assembly Bill 52 Native American consultation. The SLF search has been

returned with positive results for potential sites or locations of Native American importance within the vicinity. The NAHC suggested contacting the Morongo Band of Mission Indians further for information. Any additional tribal outreach will be conducted by the lead agency under the official AB 52 Native American consultation process. All correspondence is provided in Appendix D.

Based upon the records search and literature results, there does remain potential to discover previously unrecorded resources within the Summerwind SPA Project. The property contains multiple known resources. Further, as evident by the discovery of Site 5 during recent monitoring efforts on the OVTC property, it is possible other previously unidentified cultural resources may exist within the property.

5.2 Results of the Field Survey

BFSA field archaeologists John Baber, James Shrieve, and Vanessa Michaelsen conducted a pedestrian survey of the Summerwind SPA Project between May 18, June 14, and August 10, 2023. Aerial photographs, maps, and compass permitted orientation and location of project boundaries. Where possible, narrow transect paths were employed to ensure maximum lot coverage. All exposed ground was inspected for cultural materials. A survey form, field notes, and photographs documented the survey work undertaken.

During the survey, ground visibility was characterized as poor due primarily to dense vegetation (Plates 5.2–1 through 5.2–3). Vegetation found within the subject property is dominated by dense non-native weeds and grasses. However, pockets of sage scrub and chaparral community plants are found throughout. Small pockets of riparian habitat also exist within the seasonal drainages that cut through many of the narrow canyons found within the property.

The survey resulted in the relocation of Sites P-33-7296, P-33-013714, P-33-013715, P33-013716, P-33-013721, P-33-014999, P-33-015001, P-33-015002, P-33-015004, and Site 5. No remnant of Site P-33-013719 could be relocated. As Site P-33-013719 is situated primarily on the property to the southeast, it appears the resource has been completely removed by the OVTC development. As expected, additional irrigation elements of Site P-33-015002 were identified during the survey. In addition, two previously unidentified trash scatters, Temp-1 and Temp-2 were located. Appendix B contains site forms for Temp-1 and Temp-2 as well as applicable forms for the resources requiring site updates.

The survey also included 200 surface scrapes to remove vegetation at various locations throughout the property. These scrapes were placed at locations where potential unobserved resources may not be visible due to the vegetation and alluvial soil accumulation. As such they were placed within elevated areas similar to where Site 5 had been discovered as well as within the various canyons throughout the project. Although some scrapes were placed near the observed historic trash scatters found within the project, the goal of these scrapes was not subsurface archaeological testing of these sites. As such, the data acquired through this process is not adequate to evaluate any of the sites within the subject property. At each surface scrape location, the upper 30-60 cm of soil was inspected with additional shovel probes. The surface scrapes did not result in the identification of any resources. The location of all identified resources and surface scrapes is shown on Figures 5.2–1 and 5.2–2. The current state of each resource identified during the current survey within the project is discussed in further detail below.



Plate 5.2–1: Overview of the project from the western boundary, facing northeast.



Plate 5.2–2: Overview of the project from the northeastern corner, facing southwest.

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Plate 5.2–1 and Plate 5.2–2

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Plate 5.2–3

Example of a surface scrape conducted within the project.

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Figure 5.2–1

Cultural Resource Survey Results Map

(Deleted for Public Review; Bound Separately)

Figure 5.2–2

Surface Scrape Location Map

(Deleted for Public Review; Bound Separately)

5.2.1 Site P-33-007296

All previously recorded structures associated with Site P-33-007296 are located outside of the Summerwind SPA Project survey area within previously designated open space. It was noted during the survey that all of the previously recorded structures, except for the silos, are no-longer extent. The survey, however, did note structural remains throughout the site area including a fireplace and chimney at the former location of the Singleton Residence; and adobe walls, as previously identified by McLean et al. (2006; 2008a) at the former location of the Sunnyslope Ranch house (Plate 5.2–4 and 5.2–5). The survey did also note the remains of a collapsed bridge over a creek, along Woodhouse Road (Plate 5.2–6). However, the remnant bridge is also situated within an area that will not be impacted by the Summerwind SPA Project. An updated site form noting the current state of the resource observed during the survey can be found in Appendix B.

5.2.2 Site P-33-013714

Site P-33-013714 was originally recorded as the remains of a horse ranch complex in the far western portion of the project. During the current survey, the site was relocated to the southwestern portion of the project. Although the site generally matches the previously provided description of the resource from 2004 it appears as though the site has further deteriorated considerably since that time. As stated previously, only Buildings E through G are located within the Summerwind SPA Project. Building E and G both still appear as collapsed structures in a similar state as when recorded in 2004 (Plate 5.2–7 and 5.2–8). However, Building F, which originally was noted by Goodwin as a "standing stable," was found to now consist of only remnant lumber and structural remains (Plate 5.2–9). An updated site form noting the current state of the resource observed during the survey can be found in Appendix B.

5.2.3 Site P-33-013715

Site P-33-013715 was recorded as the remains of a residence and ancillary building located in the northern portion of the project. During the current survey, all elements of the site, including the foundational remains, rock chimney, and water tank noted by Goodwin in 2004 were relocated. All elements of the site were found to be in the same general condition as when recorded in 2004 (Plates 5.2–10 and Plate 5.2–11).

5.2.4 Site P-33-013716

Site P-33-013716 was recorded by Riordan Goodwin and Judith Marvin in 2004 as the

Sunbar Ranch constructed between the 1930s and 1950s. The site was also studied again in 2022 (Collision et al. 2022). During the current survey the site was relocated in the northeastern portion of the project and found to be in the same condition as when last studied in 2022 by Collision et al. (2022) (Plate 5.2–12).



Plate 5.2–4: Overview of former Singleton Residence located outside of the Summerwind SPA Project, facing northeast.



Plate 5.2–5: Overview of exposed adobe walls at the former Sunnyslope Ranch house, outside of the Summerwind SPA Project, facing north.

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Plate 5.2–4 and Plate 5.2–5

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Plate 5.2–6

Overview of the collapsed bridge, facing north.

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Plate 5.2–7: Overview of Building E at Site P-33-013714, facing northwest.



Plate 5.2–8: Overview of Building G at Site P-33-013714, facing north.

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Plate 5.2–7 and Plate 5.2–8

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Plate 5.2–9

Overview of Building F at Site P-33-013714, facing northwest.

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Plate 5.2–10: Overview of stone chimney at Site P-33-013715, facing south.



Plate 5.2–11: Overview of water tank Site P-33-013715, facing west.

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Plate 5.2–10 and Plate 5.2–11

The Summerwind SPA Project

5.2.5 Site P-33-013721

The Site P-33-013721 was recorded by Riordan Goodwin in 2004 as a "rural residence with a detached garage constructed in 1950. The resource was studied further in 2022 (Collision et al. (2022). During the current survey the site location was identified in the far eastern portion of the project. Although the resource was studied as recently as 2022, during the current survey the residence was found to no longer be extent (Plate 5.2–13). An updated site form noting the current state of the resource observed during the survey can be found in Appendix B.

5.2.6 Site P-33-014999

Site P-33-014999 was recorded by Goodwin in 2004. The site was relocated along the northern shoulder of a dirt access road in the northwestern quarter of the project. During the current survey, the site was found to be in similar condition as when first identified by Goodwin in 2004. Artifacts identified during the survey at the resource generally matched those previously described at the site in 2004 (Plates 5.2–14 and 5.2–15).

5.2.7 Site P-33-015001

Site P-33-015001 was recorded by Riordan Goodwin as a historic trash scatter in 2004. The site was relocated during the survey situated in a canyon in the northwestern quarter of the project. The resource was found to be approximately 150 feet north of the location on-file with the EIC. However, the site location matches the original sketch maps found on the original site form. Artifacts identified during the survey at the resource generally matched those previously described at the site. However, a historic millstone, not previously noted, was also observed at the site location (Plates 5.2–16 through 5.2–18). An updated site form noting the location where the resource was identified during the current survey can be found in Appendix B.

5.2.8 Site P-33-015002

Site P-33-015002 was recorded by Lawson et al. in 2004 as a series of discontinuous water control features (Feature A through P) utilized for the Singleton Ranch irrigation system. Only Features B, an earthen dam and reservoir, and Feature H, a collection of steel

pipes, are located within the Summerwind SPA Project boundaries. The current survey was unable to relocate Feature H, however, Feature B was relocated within its previously recorded location (Plate 5.2– 19). In 2004, Lawson et al. noted that there were no “flow control devices or conduits” associated with the feature. However, the current survey did identify an associated steel pipe, likely utilized for water conveyance, within the reservoir (Plate 5.2–20).



Plate 5.2–12: Overview of Site P-33-013716, facing southwest.



Plate 5.2–13: Overview of Site P-33-013721, facing south.

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Plate 5.2–12 and Plate 5.2–13

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Plate 5.2–14: Overview of Site P-33-017499, facing north.



Plate 5.2–15: Close up of a large painted tub or trough previously noted by Goodwin (2004).

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Plate 5.2–14 and Plate 5.2–15

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Plate 5.2–16: Overview of Site P-33-015001, facing north.



Plate 5.2–17: Overview of Site P-33-015001, facing west.

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Plate 5.2–16 and Plate 5.2–17

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Plate 5.2–18

Overview of historic millstone located at Site P-33-015001, facing south.

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Plate 5.2–19: Overview of earthen dam at Site P-33-015002, Feature B, facing north.



Plate 5.2–20: Overview of steel water conveyance pipe found within earthen reservoir at Site P-33-015002, Feature B, facing northeast.

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Plate 5.2–19 and Plate 5.2–20

The Summerwind SPA Project

In addition to the relocation of Feature B, two previously unidentified water control feature locations were identified during the survey. As the features listed in the site form for P-33-015002 are labeled A though P, the two newly identified features were labeled Features Q and R respectively. Both new features are shown in Figure 5.2–1.

- Feature Q consists of concrete footing, possibly for an electric pump, which appears to have at one time been connected to a cement standpipe by way of metal piping. A gate valve is still intact on the pipe extending from the cement standpipe. Noted elements at Feature Q include the concrete footing, a power pole, the cement standpipe, steel pipe with valve, and metal fragments (Plate 5.2–21 and Plate 5.2– 22).
- Feature R consists of a power pole and an electric water pump. The pump is embossed with the name "JOHNSTON" (Plate 5.2–23).

An updated site form noting the current state of the resource observed during the survey can be found in Appendix B.

5.2.9 District P-33-015004

District P-33-015004 was recorded by Lawson et al. in 2004 containing the James Singleton/Woodhouse Ranch (P-33-007296), the Will Singleton Ranch (P-33-015000), two historic trash scatters (P-33-014999 and P-33-015001) an isolated piece of farm equipment (P-33015003), and the irrigation and water distribution system (P-33-015002). Excluding the irrigation and water distribution system, addressed above as P-33-015002, only trash deposits P-33-014999 and P-33-015001 are recorded within the Summerwind SPA Project. Trash deposits P-33-014999 and P-33-015001 were relocated during the survey as discussed above.

5.2.10 Site Temp-1

Site Temp-1 is a historic trash scatter located in the western portion of the project northeast of Site P-33-13714. Topographically, the site sits in a small valley approximately one-quarter mile north of a dirt access road. Site Temp-1 appears to have been impacted by erosion and dense vegetation obscures much of the ground. Noted artifacts at the site

consisted of metal “pull-tab” and“church key” cans, metal and glass fragments, and abandoned household appliances. Based upon the observable scatter the site dates to the late 1960s or 1970s and measures approximately 60 by 45 feet (Plates 5.2–24 and 5.2–25). The location of Site Temp-1 is shown on Figure 5.2–1. A site form noting the current state of the resource observed during the survey can be found in Appendix B.



Plate 5.2–21: Overview of Site P-33-015002, Feature Q, facing northeast.



Plate 5.2–22: Close-up of intact valve at Site P-33-015002, Feature Q.

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Plate 5.2–21 and Plate 5.2–22

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Plate 5.2–23

Overview of Site P-33-015002, Feature R, facing south.

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Plate 5.2–24: Overview of Site Temp-1, facing northeast.



Plate 5.2–25: Close-up of household appliances at Site Temp-1, facing northeast.

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Plate 5.2–24 and Plate 5.2–25

The Summerwind SPA Project

5.2.11 Site Temp-2

Site Temp-2 is a historic trash scatter located at the southern end of a narrow canyon, approximately 300 feet south of Woodhouse Road, and in the relative center of the Summerwind SPA Project. Visibility at the site was limited by the dense vegetation. Noted artifacts at the site consisted of metal "pull-tab" cans, glass condiment bottles, as well as metal and glass fragments. Based upon the observable scatter the site dates to the late 1960s or 1970s and measures approximately 30 by 30 feet (Plates 5.2–26 and 5.2–27). A site form noting the current state of the resource observed during the survey can be found in Appendix B.

5.2.12 Site 5

Site 5 is a prehistoric artifact scatter, containing both flaked and ground stone tools, identified by Helix in 2022 during mitigation monitoring for the adjacent OVTC Project. The area surrounding Site 5, within the Summerwind SPA Project was visited during the survey. At the time of the survey Helix was in the process of their mitigation efforts in accordance with the OVTC MMRP. However, no prehistoric resources were identified outside of Site 5 within the Summerwind SPA Project. Further through the mitigation efforts conducted by Helix, and monitored by BFSA, the site has been controlled graded and entirely removed (Plate 5.2–28).



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Plate 5.2–26

Overview of Site Temp-2, facing east.

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Plate 5.2–27: Representative artifacts found at Site Temp-2, facing east.



Plate 5.2–28: Overview of the location of Site 5 after controlled grading, facing south.

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Plate 5.2–27and Plate 5.2–28

The Summerwind SPA Project

6.0 MANAGEMENT CONSIDERATIONS AND RECOMMENDATIONS

6.1 Impact Analysis/Recommendations

The survey of the Summerwind SPA Project resulted in the relocation of 10 resources (P33-007296; P-33-013714, P-33-013715, P-33-013716, P-33-013721, P-33-014999, P-33-015001; P-33-015002, P-33-015004 and Site 5). The survey identified two previously unrecorded elements of Site P-33-015002 (Feature R and Q) and two previously unidentified trash scatters (Sites Temp1 and Temp-2). However, no elements of Site P-33-013719 were relocated during the survey.

Based upon the results of the current study, all of the resources within the subject property, except for P-33-007296, will be impacted by the development of the Summerwind SPA Project (see Figure 6.1–1). However, the results of the current study for the Summerwind SPA Project indicate that no new mitigation measures are recommended for any of the resources within the property. Sites P-33-013714, P-33-013715, P-33-013716, and P-33-013721 have been evaluated as not eligible for the CRHR. Prehistoric site, Site 5, is located primarily within the OVTC development to the southeast and impacts to that resource are currently being mitigated by Helix through the OVTC MMRP. Although new water control features (Features Q and R) and two new trash scatters (Temp-1 and Temp-2) were identified during the current survey, these previously unidentified resources are consistent with Site P-33-015002 and previously recorded resources P33-014999 and P-33-015001. As such, the already established mitigation measures requiring a formal in-depth study and documentation of all water control features within the property applies to the Features Q and R. Likewise, established measures requiring Phase II test excavations at trash scatters within the project exist for P-33-014999 and P-33-015001 and it is recommended that those measures be extended to apply to Sites Temp-1 and Temp-2.

Based on the current study no new mitigation measures for the Summerwind SPA Project are proposed. Rather it is recommended that the Summerwind SPA Project proceed with the already established MMs for the project while incorporating Site P-33-015002 (Feature Q and Feature R), Site Temp-1, and Site Temp-2 into the already established project MMRP. This also includes the general condition requiring archaeological and Native American monitoring during grading. A recommended CRIP

which includes tribal monitoring and location for a potential tribal repatriation area within the subject property is attached within Appendix F.

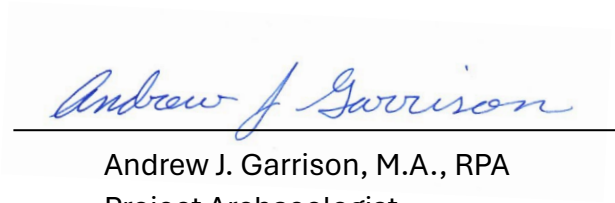
Figure 6.1–1

Cultural Resources Development Map

(Deleted for Public Review; Bound Separately)

7.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Andrew J. Garrison, M.A., RPA
Project Archaeologist

August 25, 2023
Date

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APPENDIX A

Resumes of Key Personnel

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BFSA Environmental Services, a Perennial Company

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Education

Master of Arts, Public History, University of California, Riverside **2009**

Bachelor of Science, Anthropology, University of California, Riverside **2005**

Bachelor of Arts, History, University of California, Riverside **2005**

Professional Memberships

Register of Professional Archaeologists
Society for California Archaeology
Society for American Archaeology
California Council for the Promotion of History
Society of Primitive Technology
Lithic Studies Society
California Preservation Foundation
Pacific Coast Archaeological Society

Experience

Project Archaeologist **June 2017–Present**
BFSA Environmental Serives, A Perennial Company **Poway, California**

Project management of all phases of archaeological investigations for local, state, and federal agencies including National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) level projects interacting with clients, sub-consultants, and lead agencies. Supervise and perform fieldwork including archaeological survey, monitoring, site testing, comprehensive site records checks, and historic building assessments. Perform and oversee technological analysis of prehistoric lithic assemblages. Author or co-author cultural resource management reports submitted to private clients and lead agencies.

Senior Archaeologist and GIS Specialist **2009–2017**
Scientific Resource Surveys, Inc. **Orange, California**

Served as Project Archaeologist or Principal Investigator on multiple projects, including archaeological monitoring, cultural resource surveys, test excavations, and historic building assessments. Directed projects from start to finish, including budget and personnel hours proposals, field and laboratory direction, report writing, technical editing, Native American consultation, and final report submittal. Oversaw all GIS projects including data collection, spatial analysis, and map creation.

Preservation Researcher **2009**
City of Riverside Modernism Survey **Riverside, California**

Completed DPR Primary, District, and Building, Structure and Object Forms for five sites for a grantfunded project to survey designated modern architectural resources within the City of Riverside.

Information Officer **2005, 2008–2009**
Eastern Information Center (EIC), University of California, Riverside **Riverside, California**

Processed and catalogued restricted and unrestricted archaeological and historical site record forms. Conducted research projects and records searches for government agencies and private cultural resource firms.

Reports/Papers

2019 A Class III Archaeological Study for the Tuscany Valley (TM 33725) Project National Historic Preservation Act Section 106 Compliance, Lake Elsinore, Riverside County, California. Contributing author. Brian F. Smith and Associates, Inc.

2019 A Phase I and II Cultural Resources Assessment for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California. Brian F. Smith and Associates, Inc.

2019 A Phase I Cultural Resources Assessment for the 10575 Foothill Boulevard Project, Rancho Cucamonga, California. Brian F. Smith and Associates, Inc.

2019 Cultural Resources Study for the County Road and East End Avenue Project, City of Chino, San Bernardino County, California. Brian F. Smith and Associates, Inc.

2019 Phase II Cultural Resource Study for the McElwain Project, City of Murrieta, California. Contributing author. Brian F. Smith and Associates, Inc.

2019 A Section 106 (NHPA) Historic Resources Study for the McElwain Project, City of Murrieta, Riverside County, California. Brian F. Smith and Associates, Inc.

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2012 Bolsa Chica Archaeological Project Volume 7, Technological Analysis of Stone Tools, Lithic Technology at Bolsa Chica: Reduction Maintenance and Experimentation. Scientific Resource Surveys, Inc.

Presentations

2017 "Repair and Replace: Lithic Production Behavior as Indicated by the Debitage Assemblage from CA-MRP-283 the Hackney Site." Presented at the Society for California Archaeology Annual Meeting, Fish Camp, California.

2016 "Bones, Stones, and Shell at Bolsa Chica: A Ceremonial Relationship?" Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Markers of Time: Exploring Transitions in the Bolsa Chica Assemblage." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2016 "Dating Duress: Understanding Prehistoric Climate Change at Bolsa Chica." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.

2014 "New Discoveries from an Old Collection: Comparing Recently Identified OGR Beads to Those Previously Analyzed from the Encino Village Site." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.

2012 Bolsa Chica Archaeology: Part Seven: Culture and Chronology. Lithic demonstration of experimental manufacturing techniques at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.

APPENDIX B

Updated and New Site Record Forms

(Deleted for Public Review; Bound Separately)

APPENDIX C

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX D

NAHC Sacred Lands File Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX E

Confidential Maps

(Deleted for Public Review; Bound Separately)

APPENDIX F

Cultural Resources Implementation Plan

(Deleted for Public Review; Bound Separately)

APPENDIX B: Oak Valley Town Center Project Addendum to the Summerwind Ranch at OVTC

Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

September 2020

Prepared for:

City of Calimesa
908 Park Avenue
Calimesa, CA 92320

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report SCH No. 2004061035

Prepared for:

City of Calimesa
908 Park Avenue
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ACRONYMS AND ABBREVIATIONS

BEPA	Bald Eagle Protection Act
BMPs	best management practices
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Calimesa
CO	carbon monoxide
DPF	diesel particulate filter
EIR	environmental impact report
I-10	Interstate 10
LOS	level of service
MBTA	Migratory Bird Treaty Act
MM	mitigation measure
MMRP	Mitigation Monitoring and Reporting Program
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
PCE	passenger car equivalent
PM_{10}	particulate matter 10 microns or less in diameter
RCA	Western Riverside County Regional Conservation Authority
RLC	Rivers and Lands Conservancy
ROGs	reactive organic gases
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SF	square feet
SMAQMD	Sacramento Metropolitan Air Quality Management District
TRU	transport refrigeration unit
VOCs	volatile organic compounds
YVWD	Yucaipa Valley Water District

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1.0 INTRODUCTION

This document is an Addendum under the California Environmental Quality Act (CEQA) to the City of Calimesa's (City's) Summerwind Ranch at Oak Valley Project Environmental Impact Report (EIR) (State Clearinghouse No. 2004061035). The EIR disclosed potential impacts associated with implementation of the Summerwind Ranch at Oak Valley Project (Summerwind Ranch project) and was certified by the City Council in 2005. The EIR and supporting documents are hereby incorporated by reference and are available for review at City Hall, at 908 Park Avenue, Calimesa, CA 92320. This Addendum describes a proposed amendment to the Summerwind Ranch at Oak Valley Specific Plan (SP-1, Amendment #2 [A2]) addressing an approximately 244-acre portion of the Summerwind Ranch project, herein referred to as the Oak Valley Town Center (Project), and compares the environmental impacts of the Project to the environmental impacts disclosed in the previously certified Summerwind Ranch EIR. The Addendum ultimately supports the conclusion that only minor technical changes or additions are necessary and that none of the conditions described in State CEQA Guidelines Section 15162 calling for the preparation of a subsequent or supplemental EIR have occurred.

2.0 BACKGROUND

The Project site is located in the western portion of the City of Calimesa, west of Interstate 10 (I-10) and south of the Riverside-San Bernardino County line. The site is located northwest of the junction of I-10 and Highway 60. It extends from approximately a quarter mile northwest of the Cherry Valley Boulevard/I-10 crossing to approximately a quarter mile northwest of the Singleton Road/I-10 crossing.

Land uses for the Project site were originally planned in the Oak Valley Specific Plan 216/216A, which consisted of 6,405.5 acres within unincorporated Riverside County along the west side of I-10 to the San Timoteo Wash stretching from what is now the northerly boundary of the City of Calimesa to areas now in the City of Beaumont. The Oak Valley Specific Plan 216 was approved and the associated EIR was certified on October 6, 1988 by the Riverside County Board of Supervisors, since the City was not yet incorporated. Subsequently, Oak Valley Specific Plan Amendment 216A, as analyzed in County EIR 229, was approved by the Riverside County Board of Supervisors on May 22, 1990, amending Phases 2-5 of the five phases identified in the original Oak Valley Specific Plan 216. When the City incorporated in December 1990, the City Council adopted those portions of the Oak Valley Specific Plan 216 and Oak Valley Specific Plan Amendment 216A and its accompanying EIR within the City limits and renamed it "Oak Valley SP-1."

Subsequently, an amendment to the Specific Plan (SP-1, Amendment #1) was proposed as the Summerwind Ranch at Oak Valley Project in 2005 and included approximately 2,590 acres of the Specific Plan. The amendment was proposed in recognition of the environmental sensitivity of portions of the Specific Plan that are beyond the limits of the currently proposed Project, and included a change in land uses resulting from the purchase of approximately 358 acres of the Specific Plan by the Riverside Land Conservancy. The amendment contemplated future changes that could result should the option be exercised by the Riverside Land Conservancy to convert up to an additional 578.7 acres for open space purposes. The amended Specific Plan included a variety of residential uses and open space, as well as a Town Center, located in the east-central portion of the site, west of I-10 and around the proposed junction of Roberts Road and Singleton Road. Residential uses were planned to occur in five villages, identified as Villages A through E. Individual planning areas were identified within these villages (referenced as A-1, etc.) and the Town Center (referenced as TC-1, etc.). Planned uses associated with

the Oak Valley Town Center included 130.1 acres of business park and 129.5 acres of commercial uses, along with open space along a drainage (Figure 1, *Adopted Specific Plan Land Use Plan*). The potential for construction of a City hall, fire station, lift station, and detention basin within the area was contemplated.

An EIR (SCH# 2004061035) was prepared to address the Summerwind Ranch at Oak Valley Specific Plan (SP-1, A1) and was certified by the City Council on April 18, 2005. The EIR concluded that the Summerwind Ranch at Oak Valley Project could result in potentially significant environmental impacts to aesthetics, air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, noise, public services, transportation/traffic, and utilities and service systems. With the exception of air quality impacts, impacts would be reduced to below a level of significance with implementation of the mitigation measures specified in the EIR. Significant and unavoidable impacts were identified in relation to short-term construction and operational air quality impacts.

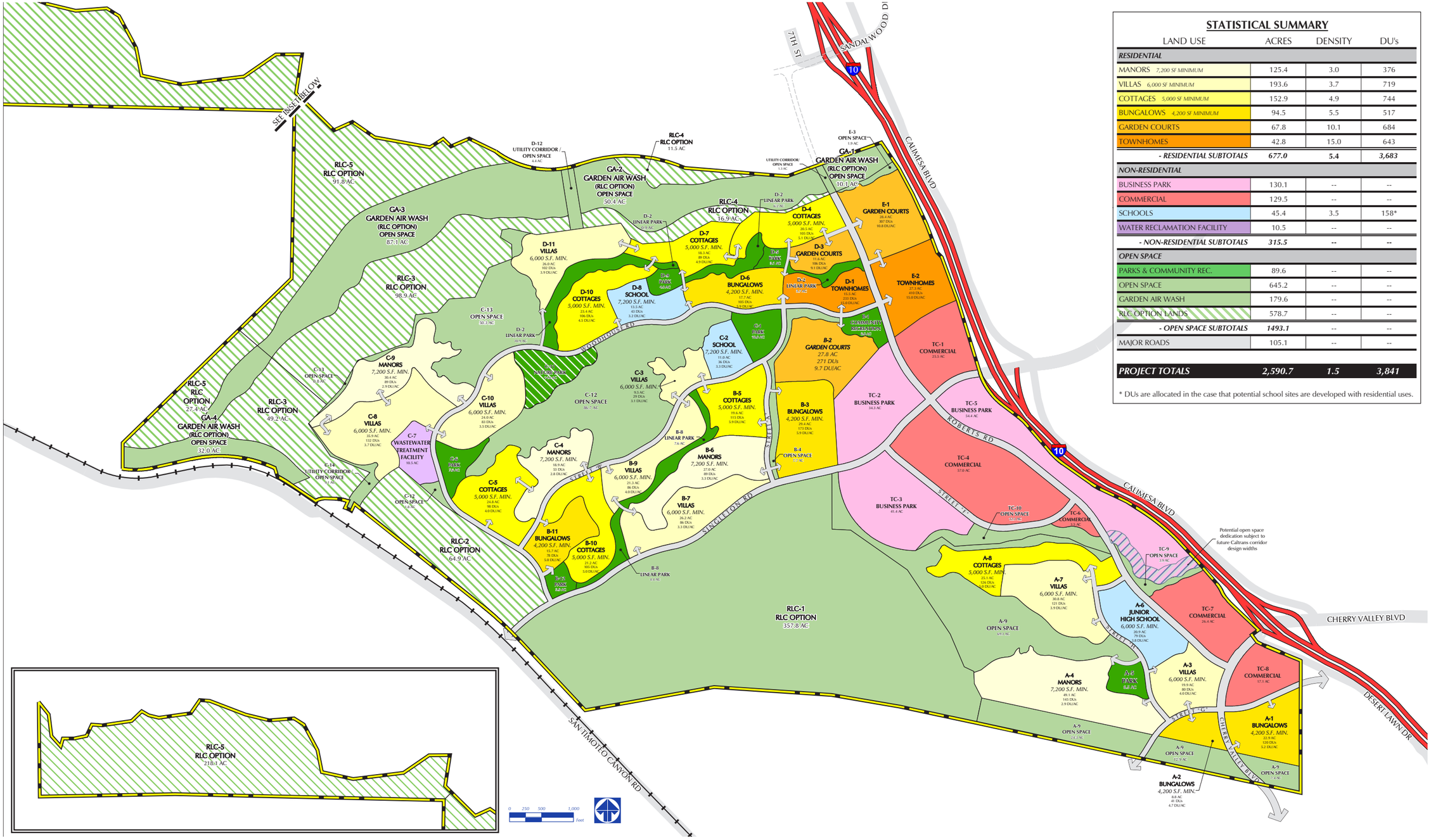
3.0 PROPOSED PROJECT MODIFICATIONS

The proposed Specific Plan Amendment (SP-1, A2) includes approximately 244 acres of the Summerwind Ranch Specific Plan's Oak Valley Town Center (Project site), and excludes its two southernmost planning areas. An additional 17.8 acres of adjacent off-site areas would be graded for slopes, walls, landscaping, and drainage improvements. Within the Project site, Roberts Road would be relocated further to the southwest, minor adjustments would be made to the alignment of Singleton Road, a formerly planned Street "F" would be omitted, and the locations of some land uses would be interchanged (Figure 2, *Proposed Specific Plan Land Use Plan*, and Figure 3, *Land Use Plan Comparison*). Specifically, business park uses would occur in areas previously planned for commercial use at the northeast and southwest quadrants of the Roberts Road/Singleton Road intersection, and commercial uses would primarily occur in areas previously planned for business park use along the I-10 frontage southeast of Singleton Road, at the southeast quadrant of the Roberts Road/Singleton Road intersection. These changes would increase the amount of business park uses that are located adjacent to planned residential areas, and reduce business park uses adjacent to the freeway frontage.

These revisions would decrease business park land uses within the Specific Plan Amendment (SP-1, A2) area from 121.1 to 119.6 acres, a decrease of approximately 1.5 acres. Proposed uses would include approximately 2,250,000 square feet (SF) of business park uses, or approximately 671,000 SF more than the 1,579,000 SF assumed in the original environmental impact modeling for the approved Specific Plan. The proposed uses would include fulfillment centers that would operate 24 hours per day. The structures would have solar-ready roofs. Gas lines would be run to each building for potential future use and plug-in outlets would be provided for idling trucks.

Commercial land uses would increase from 86.0 to 88.7 acres, an increase of approximately 2.7 acres. This area would accommodate approximately 751,800 SF of commercial retail uses, or approximately 74,600 SF more than the 677,200 SF assumed in the original environmental impact modeling for the approved Specific Plan. The commercial land use area is planned as a lifestyle retail center with large and medium box retailers.

There would also be minor revisions to the northern boundary of the TC-10 open space, totaling a reduction of approximately 1.4 acres. Approximately 2.0 acres of open space would be added along the southeastern boundary of the site. Therefore, total open space would increase by 0.6 acre. Also, an



STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	**5.4**	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	130.1	--	--
COMMERCIAL	129.5	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	***315.5***	**--**	**--**
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.2	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	***1493.1***	--	--
MAJOR ROADS	105.1	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Adopted Specific Plan Land Use Plan

Figure 1

STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	***5.4***	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	128.6	--	--
COMMERCIAL	134.2	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	318.7	--	--
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.8	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	1,493.7	--	--
MAJOR ROADS	101.3	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Specific Plan Amendment No. 1 Boundary

Specific Plan Amendment No. 2 Boundary

Potential open space dedication subject to future Caltrans corridor design widths

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Proposed Specific Plan Land Use Plan

Figure 2



Source: T & B Planning Consultants (2020)

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approximately 5-acre lake and adjacent approximately 1.7-acre linear park are proposed within the commercial site.

The major roadway reconfigurations would reduce the amount of total land dedicated to road right-of-way by approximately 3.8 acres. This includes an approximately 2.4-acre update to the boundary at the Singleton Road crossing of I-10. The proposed land use changes are summarized in Table 1, *Land Use Summary*.

Table 1
LAND USE SUMMARY

Planning Area	Previously Approved Plan (SP-1, A1)		Proposed Plan (SP-1, A2)	
	Land Use	Acres	Land Use	Acres
TC-1[1]	Commercial	25.5	Business Park	30.1
TC-2	Business Park	34.3	Business Park	25.4
TC-3	Business Park	41.4	Business Park	64.1
TC-4	Commercial	57.0	Commercial	85.6
TC-5[2]	Business Park	45.4	Commercial	3.1
TC-6[3]	Commercial	3.5	--	--
	Subtotal Business Park	121.1		119.6
	Subtotal Commercial	86.0		88.7
TC-9A	Open Space	--	Open Space	2.0
TC-10	Open Space	12.1	Open Space	10.7
	Subtotal Open Space	12.1		12.7
	Singleton/Roberts ROW	19.1	Singleton/Roberts ROW	20.9
	F Street ROW	8.0	--	--
	--	--	I-10 Freeway ROW	2.4
	Subtotal Major Roads	27.1		23.3
Total		**246.3**		**244.3**[4]

[1] 2 acres within TC-1 is excluded from the Amendment No. 2 boundary.
[2] 45.4 acres of the Amendment No. 1 TC-5 PA are within the Amendment No. 2 boundary; 9.0 acres are outside of the Amendment No. 2 boundary.
[3] TC-6 was previously planned south of the Roberts Road/Street "F" intersection. As Street "F" is no longer proposed, this area has been absorbed into other planning areas.
[4] An additional 17.8 acres of adjacent off-site areas would be graded for slopes, walls, landscaping, and drainage improvements.
ROW = right-of-way

A lift station and water quality pond would be located along the southwestern edge of the Project site within planning areas A-9 and TC-3, respectively. A lake would provide storage for reclaimed water as part of a comprehensive water management plan for the area. Additional improvements include funding for improvements to the Singleton Road freeway bridge crossing and freeway access ramps, as well as full construction of Singleton Road from I-10 to the western limits of the Project site and Roberts Road from the northern to the southern limit of the Project site. An equestrian trail previously planned along Singleton Road would be eliminated and an 8-foot paseo within the Singleton Road right-of-way would be provided from the I-10 freeway to the western edge of the Project site. The Project proponent would be required to implement water, recycled water, and sewer infrastructure in accordance with current plans of the Yucaipa Valley Water District (YVWD), which differ from the plans at the time the Specific Plan was amended in 2005.

The proposed revisions would alter the development standards for business park uses contained in the Summerwind Ranch Specific Plan.

The maximum-sized warehouse, storage facility, parcel hub and logistics facility would be modified from 250,000 SF to 707,000 SF. Transport refrigeration units would not be permitted to operate on the side of warehouses adjacent to residences within the E-2 Townhomes, B-2 Garden Courts, B 3 Bungalows and A-8 Cottages. TRUs would also not be permitted to operate on the side of the warehouses adjacent to the B-1 Community Recreation or TC-10 Open Space. Similarly, if generators are installed, they would be located on the side of the warehouse that faces away from these locations. The minimum required setback from adjacent sensitive receptor buildings would be decreased from 500 feet to 65 feet. This setback distance is measured from the outer wall of the proposed warehouse to the outer wall of the the main structure of an adjacent sensitive receptor building, and is separate and apart from other setback provisions, which are measured from the property line adjacent to the public right-of-way. All setback provisions must be met. The specific warehouse setback provisions that are proposed to be altered through this Project were not in place when the Summerwind Ranch Specific Plan was adopted in 2005. Rather, those provisions were approved separately by the City in 2016, through adoption of Ordinance 343.

A Health Risk Assessment has been submitted addressing potential impacts of these uses on all adjacent residential planning areas. This Health Risk Assessment confirms that the proposed modifications, with the incorporation of the noted design features, would avoid a significant health risk impact to any residential planning area. Planning Area TC-1A is planned for commercial use, but currently contains a non-conforming residential use. Due to the transitional nature of land use in this planning area adjacent to TC-1, potential health risks to this location will be addressed as part of the Development Plan Review and a City Council-approved CUP for warehouses pursuant to CMC Section 18.30 for the TC-1 Business Park, based on the land use and associated topography in the TC-1A Planning Area that are existing and planned at the time of that review. If a residential use is still present in the TC-1A Planning Area at that time, an additional Health Risk Assessment and noise analysis will be required and their recommendations would be incorporated into project design as part of the Development Plan Review and a City Council-approved CUP for warehouses pursuant to Calimesa Municipal Code (CMC) Section 18.30.

The CMC (as revised in 2016 through Ordinance 343) requires a minimum separation of 250 feet between adjacent warehouses on the same or different parcels. The revised Specific Plan would include no minimum distances between adjacent warehouse, storage facility, parcel hub or distribution facility uses, whether on the same or separate lots or parcels; however, building setbacks shall comply with Table 18.30.040 of the City of Calimesa Development Code. Specifically, these setbacks include the following:

a) There shall be a street setback according to the street classification as set forth in the general plan as follows:

    1. Collector and Local.

        a. Building Setback. Buildings and structures shall be located no closer than 15 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

b. Parking Setback. Parking areas shall be located no closer than 10 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

c. Landscape Setback. Building and parking setback areas shall be landscaped in accordance with the provisions of Chapter 18.10 CMC, Landscape Requirements.

d. Storage Setback. All storage of materials and display areas fenced and screened, in accordance with this chapter, shall be located no closer than 15 feet of the property line adjacent to the public right-of-way from which primary access for the site is obtained. A 10-foot setback may be permissible for storage, if the building for the use is fenced within the storage area.

2. Major and Secondary Arterials.

a. Building Setback. Buildings and structures shall be located no closer than 20 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

b. Parking Setback. Parking areas shall be located no closer than 10 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

c. Landscape Setback. Building and parking setback areas shall be landscaped in accordance with the provisions of Chapter 18.70 CMC, Landscape Requirements.

d. Storage Setback. All storage of materials and display areas fenced and screened, in accordance with this chapter, shall be located no closer than 20 feet of the property line adjacent to the public right-of-way from which primary access for the site is obtained. A 10-foot setback may be permissible for storage, if the building for the use is fenced within the storage area.

3. Freeway.

a. Building Setback. Buildings and structures shall be located no closer than 20 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

b. Parking Setback. Parking areas shall be located no closer than 20 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

c. Landscape Setback. Building and parking setback areas shall be landscaped in accordance with the provisions of Chapter 18.70 CMC, Landscape Requirements.

d. Storage Setback. All storage of materials and display areas fenced and screened, in accordance with this chapter, shall be located no closer than 20 feet of the property line adjacent to the public right-of-way from which primary access for the site is

obtained. A 10-foot setback may be permissible for storage, if the building for the use is fenced within the storage area.

b) Setbacks for side streets shall be as follows for all street classifications:

1. Building Setback. Buildings and structures shall be located no closer than 10 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

2. Parking Setback. Parking areas shall be located no closer than 10 feet of the property line adjacent to the public right-of-way. All setback areas shall be landscaped.

3. Landscape Setback. Building and parking setback areas shall be landscaped in accordance with the provisions of Chapter 18.70 CMC, Landscape Requirements.

4. Storage Setback. All storage of materials and display areas fenced and screened, in accordance with this chapter, shall be located no closer than five feet of the property line adjacent to the public right-of-way from which primary access for the site is not obtained.

c) Side Yard Setback. There shall be no required side yard except where the property adjoins a parcel zoned or shown on the general plan land use map for residential use, in which case a minimum building setback of 30 feet shall be maintained and a buffer of landscaping shall be placed adjacent to the property line in accordance with the provisions of CMC 18.70.140(A).

d) Rear Yard Setback. There shall be no required rear yard except where the property adjoins a parcel zoned or shown on the general plan land use map for residential use, in which case a minimum building setback of 30 feet shall be maintained and a buffer of landscaping shall be placed adjacent to the property line in accordance with the provisions of CMC 18.70.140(A).

The Project proposes to modify parking standards for warehouse distribution uses that reduce the required number of spaces for buildings exceeding 40,000 SF. Specifically, the CMC requires the provision of 1 parking space per 1,000 SF of gross floor area for warehouse and wholesaling uses. The Specific Plan would instead allow the number of required parking spaces for warehouses to be the total of:

- 1 space per 1,000 SF for the first 40,000 SF of gross floor area;
- 1 space per 3,000 SF for over 40,000 SF of gross floor area; and
- 1 space per 250 SF of gross floor area for the office portion of the building.

The number of parking spaces for warehouse uses varies with the size of the building because warehouses are primarily focused on the storage of items, as opposed to providing space for customers or employees who would require parking spaces. As a result, there is not a direct proportion between the increase in square footage of gross building area for warehouses and the number of people (needing parking) who would occupy the space. The revised ratios are typical of surrounding jurisdictions with such uses and have proven to be sufficient based on ongoing parking demand analyses. The size of the required parking spaces also would be reduced from 10' X 19' to 9' X 19'.

The approved Specific Plan contemplated special feature monumentation at Cherry Valley Boulevard/ Roberts Road and Singleton Road/Roberts Road. The Specific Plan modifications would potentially allow

a pylon sign as part of this monumentation, subject to future site plan approvals. Commercial/Business monuments or pylon signs also would potentially be allowed along I-10 as illustrated on Specific Plan Figures III-21 and IV-26, also subject to future approvals.

The proposed design guideline revisions include a requirement that large building facades of business park uses be articulated and screened. Large wall planes would be broken with offsets and the use of color and other ornamental architectural features to the extent possible. Business park buildings would not be required to comply with the Specific Plan design guideline that no wall should have a blank, uninterrupted length exceeding 30 feet without including a change in texture, change in plane, window, lattice, tree, or equivalent element; however, their compliance is encouraged. They also would not be required to use heavy timber, rustic weathered wood, or brick or stone. Building entries and office areas are to be considered as opportunities to create building focal points with the use of varied massing, wall plane offsets, windows, colors, and other architectural features.

Planning area and perimeter street edges would be screened/softened with appropriate landscape material and/or decorative walls. Specifically, walls, berms, or a combination thereof would be used to provide visual screening and sound attenuation between business park buildings and adjacent residential development and trails within community open spaces. The barrier between the business park planning areas TC-1 and TC-2 and adjacent residences would be 14 to 15 feet tall sound walls, and may be comprised of a combination of berm and/or block wall. For visual screening the Specific Plan provides that a block wall, berming or a combination of both will be used to screen views of trailers, docks, and truck and trailer parking on Planning Areas TC-1, TC-2, and TC-3 visible from residential uses and open space. Screening wall heights will be determined at the time of the Development Plan Review and CUP stage and trees may also be considered to provide visual screening. A vegetative barrier in addition to the wall/berming would also be required along the northern edges of Planning Areas TC-1 and TC-2 as well as along the western boundary of Planning Area TC-2.

In addition to the proposed revisions to the Specific Plan described above, the Project proposes a General Plan Amendment to: (1) modify the Land Use Plan (Figure LU-1) to relocate the Business Park, Commercial and Open Space land uses as discussed in the Specific Plan Amendment (SP-1, A2) discussion above; (2) to modify the Circulation Map (Figure TM-1) to remove Street F; and (3) to modify the Trails Master Plan (Figure OSPR-2) to remove the bike lanes from Street F, remove the equestrian trail from Singleton Road and provide a Paseo within the Singleton Road right-of-way. Finally, the Project includes a Tentative Parcel Map application to establish future fee title lots to accommodate the commercial and business park land uses. At a future date, the applicant will submit a Development Plan Review application(s) pursuant to CMC Section 18.90 and CUP application(s) for warehouses pursuant to CMC Section 18.30 to approve the approximately 2.25 million SF of business park/warehouse uses. The Project would comply with applicable regulations and relevant mitigation measures included in the existing certified EIR (SCH# 2004061035).

Project Features

The following design features are incorporated to promote an integrated land use plan that promotes harmony between adjacent land use planning areas:

- The westerly half of the I-10/Singleton Road interchange shall be constructed prior to the issuance of the first certificate of occupancy for business park uses. Specifically, this includes (1) the eastbound off ramp from I-10 to Singleton Road, (2) the westbound on ramp to I-10 from

Singleton Road, and (3) realignment of Calimesa Boulevard to move the Calimesa Boulevard/ Singleton Road intersection further east of the I-10 westbound ramps intersection on Singleton Road.

- Transport refrigeration units (TRUs) and generators would not be permitted to operate on the side of warehouses adjacent to residences within the E-2 Townhomes, B-2 Garden Courts, B-3 Bungalows, and A-8 Cottages. TRUs would also not be permitted to operate on the side of the warehouses adjacent to the B-1 Community Recreation or TC-10 Open Space.

- Trucks accessing business park uses would be equipped with ambient noise-sensing back-up alarms.

- In accordance with state air quality regulations, trucks equipped with TRUs are not allowed to idle more than five minutes. To comply with this regulation, loading docks would be equipped with plug-in outlets for idling trucks.

- Business park structures would have solar-ready roofs.

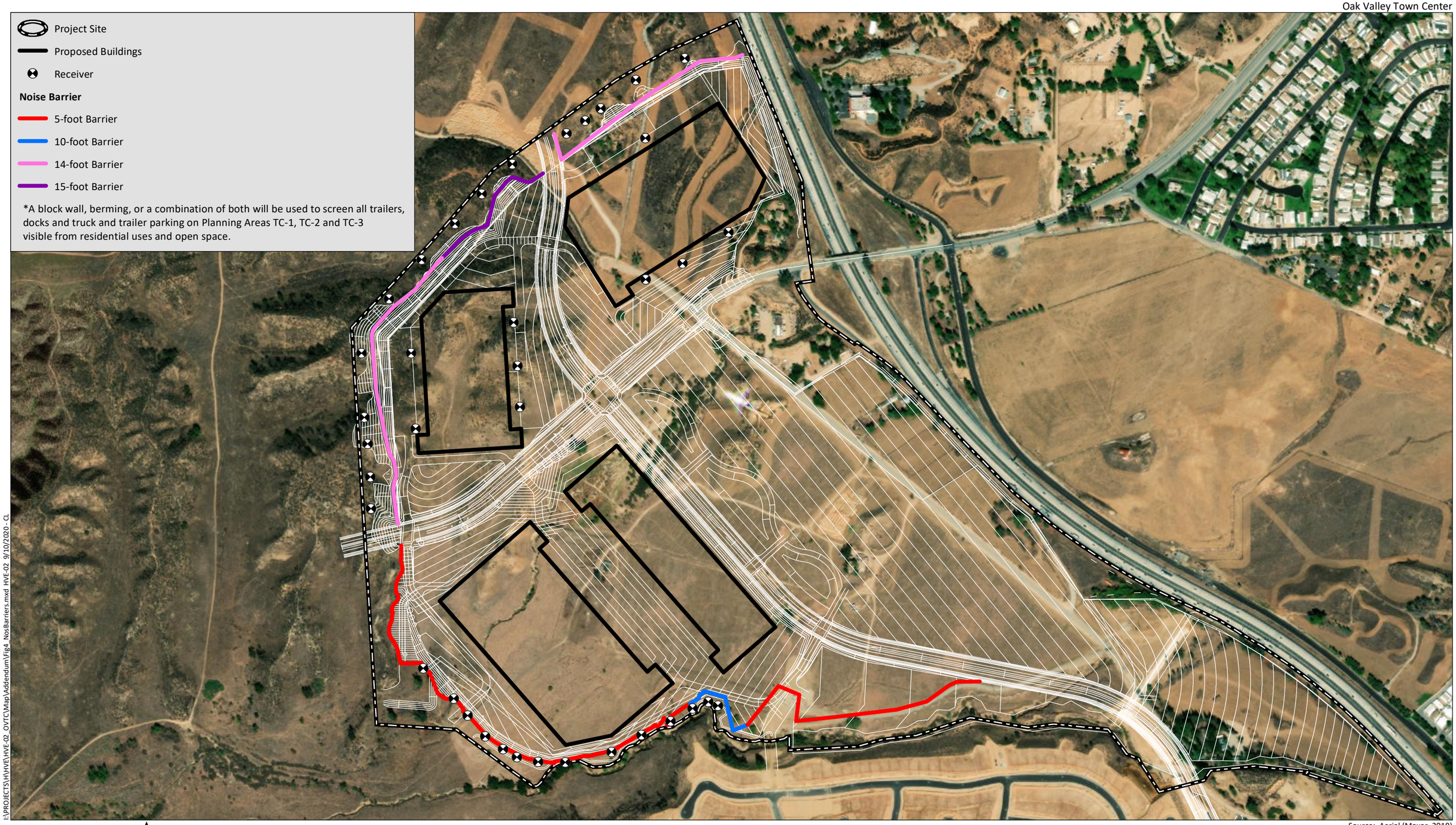
- Gas lines would be run to each business park building for potential future use.

- Barriers consistent with the heights and locations shown on Figure 4, *Edge Condition Barriers*, would be installed at the interface between residential and business park uses. All such barriers would be solid, and may be constructed of earth (berm) and/or masonry, with no cracks or gaps through or below the walls. Any seams or cracks would be filled or caulked.

- The applicant or its successor would install tiered vegetative landscaping, which shall include a combination of evergreen trees and shrubs along the entire length of the northern Project boundary and the northernmost 1,000 linear feet of the western Project boundary, extending 165 feet beyond the Business Park uses along the site boundaries (Figure 5, *Vegetative Barrier*). Trees would have finely needled leaves and plant selections would be consistent with the *Landscaping Guidance for Improving Air Quality Near Roadways* (Sacramento Metropolitan Air Quality Management District [SMAQMD] 2020). Vegetation would be planted as soon as possible following finish grading, with plant spacing such that the vegetation would form a vegetative barrier at least 33 feet thick and least 16 feet in height. It shall be maintained as part of the Project's landscaped areas. Landscape plans shall be reviewed and approved by the City. The vegetative barrier is one of the primary methods proposed to minimize aesthetic and air quality impacts.

- Planning Area TC-1A is designated for commercial use, but currently contains a non-conforming residential use. Due to the transitional nature of land use in this planning area adjacent to TC-1 (with anticipated changes in both land use and elevations), the need for a barrier to attenuate noise and/or air pollution impacts as well as setback requirements at the TC-1A Commercial Planning Area will be addressed as part of the Development Plan Review and a City Council-approved CUP for warehouses pursuant to CMC Section 18.30 for the TC-1 Business Park, based on the land use and associated topography in the TC-1A Planning Area that are existing and planned at the time of that review.

Oak Valley Town Center



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0 500 Feet

Source: Aerial (Maxar, 2018)

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Edge Condition Barriers

Figure 4

Oak Valley Town Center



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0 500 Feet

Source: Aerial (Maxar, 2018)

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Vegetative Barrier

Figure 5

- All off-road diesel-powered construction equipment greater than 50 horsepower used for construction of the Project's retail uses shall be outfitted with a California Air Resources Board (CARB) certified Level 3 diesel particulate filter (DPF).

- Zero-VOC paint will be used in construction of the Project's retail uses.

- Ground disturbing activities (including archaeological testing and surveys) would be monitored by a Native American Cultural Resource Monitor(s) from a culturally affiliated Tribe(s). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submittal to the State Historic Preservation Officer and the Tribal Historic Preservation Office.

4.0 PURPOSE OF THE ADDENDUM

As outlined in State CEQA Guidelines Section 15164(a), an Addendum to a previously certified EIR may be prepared if only minor technical changes or additions are necessary or none of the conditions described in State CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred.

A subsequent or supplemental EIR must be prepared if one of the following conditions has been met (State CEQA Guidelines Section 15162(a)):

(1) Substantial changes are proposed in the project which will require major revisions of the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the EIR was adopted, shows any of the following:

   A. The project will have one or more significant effects not discussed in the EIR;

   B. Significant effects previously examined will be substantially more severe than shown in the EIR;

   C. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

   D. Mitigation measures or alternatives which are considerably different from those in the EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If none of these circumstances are present, and only minor technical changes or additions are necessary to update the previously certified EIR, an Addendum may be prepared in accordance with CEQA Guidelines Section 15164. This Addendum has been prepared by the City because the construction and operation of the proposed Project is consistent with the overall project evaluated in the EIR and does not require major revisions to the EIR due to new significant impacts or substantial increases in the severity of previously identified significant impacts. The anticipated environmental impacts of the proposed modifications, as explained in detail in the following analysis, have been analyzed and mitigated accordingly in the EIR.

In the time since the EIR was certified in 2005, portions of the Summerwind Ranch Specific Plan (outside of the SP-1, A2 Project site) have been developed, and development has continued in the surrounding area. Such development was, however, anticipated in the EIR. There have been no substantial, unanticipated changes in the surrounding area since certification of the EIR that would result in previously unanticipated significant environmental impacts or a substantial increase in the severity of previously identified significant impacts.

There is no known information of substantial importance indicating that new significant impacts or a substantial increase in the severity of significant impacts would occur. As evaluated in the supporting analysis of this Addendum, applicable mitigation measures that were previously identified in the EIR would continue to ensure that the majority of impacts (with the exception of previously identified significant and unmitigated air quality impacts) are reduced to less than significant levels. In some cases, as described in the analysis, previously identified mitigation measures are not applicable to the Project and are not necessary to reduce impacts generated by the Project (SP-1, A2). As documented throughout this Addendum and associated technical studies, no new or substantially more severe significant impacts would result from the proposed modifications. Specifically, incorporation of the noted project design features would ensure that new significant impacts do not result from moving industrial uses closer to residential areas. Therefore, no other mitigation measures or alternatives that would substantially reduce a significant effect on the environment but have been declined by the project proponents have been identified or determined to be feasible. An MMRP containing the mitigation measures applicable to the Project is provided as Attachment A.

Per State CEQA Guidelines Section 15164(c), an Addendum need not be circulated for public review, but can be included in or attached to the EIR. Prior to its consideration of the proposed Project, the City will review and consider this Addendum together with the EIR.

5.0 ENVIRONMENTAL ANALYSIS

Documents containing the environmental analysis supporting the City's action in approving the proposed Project include the EIR, associated technical studies, and Mitigation Monitoring and Reporting Program (MMRP), this Addendum, and additional supporting documentation for this Addendum, including a Supplementary Air Quality Analysis (Attachment B), Supplementary Noise Analysis (Attachment C), Trip Generation and Circulation Context (Attachment D), Traffic Phasing Evaluation (Attachment E), and Vehicle Miles Traveled Memorandum (Attachment F).

This Addendum analyzes the environmental issue areas that were addressed in detail in the EIR, and discusses whether the proposed minor modifications proposed by the Project described above would trigger significance criteria identified in the State CEQA Guidelines Section 15162 and 15163, in each of these areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hydrology/Water Quality
- Land Use/Planning
- Noise
- Public Services
- Transportation/Traffic
- Utilities and Service Systems
- Growth-inducing Impacts

Population and housing were addressed within the growth-inducing impacts discussion. The environmental topics of agricultural resources, hazards/hazardous materials (except as addressed relative to air quality and fire services in the respective EIR sections), mineral resources, and recreation were determined through the Initial Study/Notice of Preparation process to not have the potential to result in significant environmental impacts, and therefore no further environmental analysis was required in the EIR. The proposed modifications would not alter this conclusion. At the time of EIR preparation, the topics of energy, greenhouse gases (GHGs), Tribal cultural resources, and wildfire were not included in the CEQA Appendix G Checklist of topics to address.

For each environmental issue area addressed, this Addendum provides a comparative analysis of the impacts identified in the EIR versus the potential impacts posed by the Project (SP-1, A2). The analysis includes a determination regarding the occurrence of new significant impacts or an increase in the severity of previously identified impacts. Finally, an analysis is presented to determine whether there are any changed circumstances or new information relative to the proposed modifications for the Project that would result in new or substantially more severe environmental impacts. For each environmental issue area, the following are provided to conduct this comparative analysis:

1. Summary of Previous Analysis

2. Analysis of the Proposed Modifications

3. Changes in Circumstances/New Information

4. Conclusion

The following environmental analysis supports the City's determination that approval and implementation of the Project would not result in new significant environmental impacts or a substantial increase in the severity of previously disclosed impacts covered under the EIR and related MMRP. This environmental analysis is subject to all applicable mitigation measures outlined in the EIR and MMRP. Mitigation measures that are not applicable to the Project also are noted. The following presents the environmental analysis of impacts associated with the modifications to the originally approved project proposed by this Project.

Aesthetics

Summary of Previous Analysis

Aesthetic impacts are analyzed in the EIR, Section 3.1, pages 3.1-1 through 3.1-11. The EIR concluded that the project had the potential to result in significant visual impacts. The analysis in the EIR states that no scenic resources would be impacted, the proposed site plan had taken into account the environmentally sensitive resources on the site; the Specific Plan includes detailed development standards and design guidelines to ensure the preservation of the scenic quality of the site in addition to creating a high quality development; the project would comply with the applicable design/development guidelines and Community Design goals outlined in the City's General Plan; and the project proposed hillside management regulations. Although not explicitly stated in the analysis of the EIR, the approved MMRP states that the project has the potential to significantly impact the hillsides of the site, with this impact reduced to below a level of significance through implementation of mitigation measure (MM) A1. With regard to the potential to degrade visual quality, the EIR describes that although the site would be developed, it would avoid most of the ridgelines and preserve as much of the open space as possible, therefore maintaining and enhancing its visual quality through project design. The approved MMRP identifies that the project has the potential to degrade the visual quality of ridgelines and preserve open space on the site, with this impact reduced to below a level of significance through implementation of MM A2. The project would introduce new sources of light and glare, including street lighting, residential and commercial lighting, sports fields lighting, and light intrusion from motor vehicles, but that these impacts would be less than what would have occurred through implementation of the land use plan in effect at that time. Additionally, the Specific Plan includes extensive guidelines and standards to ensure that light and glare impacts would not create a significant impact to the adjacent areas. With implementation of MM A3, impacts would be less than significant. Similarly, the project has the potential to create cumulative aesthetic light and glare impacts in conjunction with other developments in the area, which would be reduced to below a level of significance through MM A4. The following measures were identified as mitigation to reduce each of these impacts to below a level of significance:

MM A1 All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.

MM A2 Same as MM A1, above.

All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.

MM A3 Same as MM A1, above.

All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.

MM A4 Same as MM A1, above.

All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.

Analysis of the Proposed Modifications

The proposed modifications would result in similar aesthetic impacts as analyzed in the EIR. No additional ridgelines or hillsides would be impacted. The minor alterations in the boundary of the open space along the southwestern edge of the Town Center would have a negligible visual impact in the context of the broader development and open space conservation pattern. The change in locations of business park/commercial uses would result in more commercial uses being located along the I-10 corridor, which would provide a more interesting visual experience for travelers in that corridor than the more monotonous business park uses that were previously planned in that location. The introduction of a lake to the Town Center would provide a new visual amenity. MM A1 (repeated in MM A2 through A4) requires that development comply with development standards and design guidelines in the Specific Plan and would be implemented to minimize potential visual impacts. Modifications to the Specific Plan standards would, however, occur. As described in further detail in the Proposed Project Modifications, these modifications would include revisions to allow larger buildings with smaller setbacks in the business park area. These modifications would provide a greater degree of visual contrast with the surrounding development. Additionally, although not encouraged, the revisions could allow business park buildings to have 30-foot blank, uninterrupted walls. The buildings would not be in highly visually sensitive locations. The Specific Plan also includes standards to articulate and screen building facades, including breaking large wall planes with offsets and the use of color and other ornamental architectural features to the extent possible, as well as screening/softening planning area and perimeter street edges with appropriate landscape material and/or decorative walls.

Planning area and perimeter street edges would be screened/softened with appropriate landscape material and/or decorative walls. Specifically, walls, berms, or a combination thereof would be used to provide visual screening and sound attenuation between business park buildings and adjacent residential development and trails within community open spaces (see Figure 4 for details). The barrier between the business park planning areas TC-1 and TC-2 and adjacent residences would be 14 to 15 feet tall sound walls, and may be comprised of a combination of berm and/or block wall. For visual screening the Specific Plan provides that a block wall, berming or a combination of both will be used to screen views of trailers, docks, and truck and trailer parking on Planning Areas TC-1, TC-2, and TC-3 visible from residential uses and open space. Screening wall heights will be determined at the time of the Development Plan Review and CUP stage and trees may also be considered to provide visual screening. A vegetative barrier in addition to the wall/berming would also be required along the northern edges of Planning Areas TC-1 and TC-2 as well as along the western boundary of Planning Area TC-2.

Residential areas would be located at elevations approximately 10 to 30 feet above TC-1, approximately 30 feet above TC-2, and approximately 30 feet above TC-3 (with this development located on the other side of an open space area). Given the difference in elevation, the perimeter walls would substantially screen, but not entirely block, views from the residential areas. Thus, while the changes in development standards may incrementally increase visual impacts, they would not substantially increase the severity of impacts relative to the development that would be allowed under the approved project. Consistent with the conclusions of the EIR, the development standards would minimize the additional visual

impacts of the proposed business park uses, ensuring that no new significant visual impacts would occur. The proposed changes would not result in substantially more lighting than would have occurred under the previously approved plan; therefore, the severity of impacts related to light and glare would not substantially increase. Upon implementation of MM A1 through A4, visual impacts would be less than significant.

Changes in Circumstances/New Information

In the time since the EIR was certified, portions of the Summerwind Ranch Specific Plan (outside of the Project site) have been developed, and development has continued in the surrounding area. Such development was, however, anticipated in the EIR. There have been no substantial, unanticipated, changes in the visual environment since certification of the EIR. There is also no new information of substantial importance, including information regarding mitigation measures or alternatives that would substantially reduce one or more significant effects of the project. Therefore, no changes in circumstances and no new information of substantial importance relative to aesthetics and visual resources have been identified.

Conclusion

Based on the above, no new significant aesthetic impacts or substantial increases in previously identified aesthetic impacts would occur as a result of the proposed modifications. Implementation of design features identified in MM A1 from the EIR would reduce visual impacts to less than significant. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Air Quality

Summary of Previous Analysis

An analysis of air quality impacts is contained in the EIR, Section 3.2, pages 3.2-1 through 3.2-21. Impacts were identified relative to construction and operation, and cumulative conditions. With regard to construction, impacts were identified relative to fugitive dust (particulate matter 10 microns or less in diameter [PM_{10}]), oxides of nitrogen (NO_X), reactive organic gases (ROGs), carbon monoxide (CO), and volatile organic compounds (VOCs). EIR MM AQ1, AQ2-1, AQ2-2, AQ2-3, and AQ3 are required to reduce these emissions, as follows:

MM AQ1 The project proponent will implement Rule 403 as applicable, which would include but not be limited to the following:

- Portions of the site under active construction shall be watered as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- Soils shall be watered/stabilized prior to, during, and following cut and fill activities.
- A minimum soil moisture content of 12% shall be maintained during earth-moving activities using the ASTM method D-2216.

- All trucks hauling dirt, sand, soil, or other loose materials shall be covered, or maintain at least two feet of freeboard in accordance with the requirements of Section 23114 of the California Vehicle Code.

- Construction access roads shall be paved at least 100 feet onto the site from main roads.

- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less. Roads shall be watered every two hours during active construction operations, and/or a chemical stabilizer shall be applied to all unpaved surfaces.

- Disturbed areas shall be revegetated as quickly as possible consistent with approved erosion control plans.

- A Traffic Control Plan shall be provided for each major phase of construction by the Applicant and approved by the City Engineer addressing construction site access and egress, temporary road detours, construction traffic parking and staging, and haul routes.

- All streets used for construction site access or egress shall be swept once daily during active construction if visible soil materials are carried to adjacent streets.

MM AQ2-1 Construction equipment with low emission factors and high energy efficiency shall be used where possible and when available.

MM AQ2-2 To minimize equipment emissions, engine maintenance shall be performed regularly.

MM AQ2-3 Alternative fuels such as ultra-low sulfur diesel for off-road construction vehicles/equipment shall be used where possible.

MM AQ3 Application of architectural coatings (i.e., paint, etc.) shall be limited to an average of no more than 225 gallons per week and/or "Zero-VOC" paint shall be used.

With required implementation of these mitigation measures, the EIR concluded that emissions of PM_{10}, CO, and VOCs would be less than significant. Emissions of NO_X and ROGs would, however, remain significant even with implementation of the identified mitigation.

Project operational emissions would result in significant impacts related to emissions of ROGs, NO_X, CO, and PM_{10}, primarily from vehicular traffic generated by the project. EIR MM AQ4-1, AQ4-2, AQ4-3, AQ4-4, and AQ4-5 are required to reduce these emissions.

MM AQ4-1 On-site bicycle trails linking the facility to designated bicycle commuting routes shall be provided.

MM AQ4-2 Site improvements such as street lighting, street furniture, route signs, bus turnouts, and sidewalks or pedestrian paths shall be provided.

MM AQ4-3 The proposed dwelling units shall exceed minimum statewide energy construction requirements, as follows:

- Use of low emission water heaters
- Use of energy efficient appliances

MM AQ4-4 Park and ride lots shall be provided near freeway access, as follows:

- Development of approximately 50-60 parking spaces within the residential component of the project.
- Development of approximately 100 parking spaces within the commercial component of the project.

MM AQ4-5 According to Ride Guide provided by the RTA (Riverside Transit Agency), bus route 36 shall serve the proposed project site. The project will provide bus turnout facilities to serve this route as recommended by RTA.

[There are no mitigation measures between MM AQ4-5 and MM AQ9.]

MM AQ9 Cumulative impacts are reduced by implementation of mitigation measures for construction and operations. But the impacts remain significant.

Even with the required implementation of these mitigation measures, emissions of ROGs, NO_X, CO, and PM_{10} would remain significant.

Construction and operational emissions would contribute to significant cumulative air quality impacts. Although cumulative impacts would be partially alleviated by implementation of the above-noted mitigation measures, they were determined to remain significant and unavoidable.

Analysis of the Proposed Modifications

An air quality analysis (HELIX 2020a; Attachment B) was prepared to evaluate the proposed modifications.

Construction emissions were modeled for the development of the Oak Valley Town Center and neighboring San Gorgonio LLC owned residential lots within the Summerwind Ranch Specific Plan. The results are shown in Table 2, *Construction Period Emissions Summary*.

Table 2
CONSTRUCTION PERIOD EMISSIONS SUMMARY

Phase / Activity	Pollutant (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Grading (including off-site; 2020-2021)	5	50	33	<0.5	6	4
Summerwind Commons (2021-2022)	97	46	37	<0.5	6	3
TC-3 Construction (2021-2023)	6	40	52	<0.5	10	4
TC-1 and TC-2 Construction (2023-2024)	5	36	48	<0.5	8	3
Retail Parcels (2025-2031)	4	24	40	<0.5	4	1
San Gorgonio Residential (2025-2031)	44	72	87	<0.5	23	8
Peak Daily Emissions[1]	103	96	127	<0.5	27	9
Summerwind Ranch EIR Totals	200	307	130	<0.5	66	--
Net Change (percent)	**-97 (-49%)**	**-211 (-69%)**	**-3 (-2%)**	**<1**	**-38 (-58%)**	**--**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**

CalEEMod outputs are provided as Attachment A of the Supplementary Air Quality Analysis.

[1] Peak Daily VOC emissions occur in 2021 when Summerwind Commons and TC-3 Construction overlap. Peak daily emissions for all other pollutants occur when the Retail Parcels and San Gorgonio Residential developments overlap.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
SCAQMD = South Coast Air Quality Management District

As shown in Table 2, construction emissions associated with the proposed Project would be lower than construction emissions associated with the Summerwind Ranch and/or would be below significance thresholds. As such, the proposed Project modifications would not result in a new or substantially more severe significant impact to construction period air quality emissions.

Operationally, the proposed project modifications would result in reduced impacts to air quality. While the total square footage of business park and commercial land uses would slightly increase, thus increasing area source emissions, the EIR determined that vehicular traffic was the primary source of operational emissions, and overall vehicular traffic volumes associated with the proposed modifications would decrease from what was analyzed in the EIR due to the trip generation rates associated with the proposed uses (refer to Transportation/Traffic for details). The results presented in Table 3 only include land uses within the Oak Valley Town Center project site. Modeling results for the approved land uses also differs from the air pollutant emission values presented in the Summerwind EIR because of updated modeling. The analysis presented in the Summerwind EIR was conducted using URBEMIS 2002, while the current modeling was conducted using CalEEMod (2016). URBEMIS 2002 fails to account for mobile source emissions associated with vehicle idling, starting, and evaporative loss during vehicle operation. The updated modeling also incorporates updated trip lengths and emission factors. For the purposes of this analysis, the same modeling approach was used for both existing and planned land uses, in order to provide an appropriate basis for the comparison of relative impacts. Daily operational emissions would be reduced by approximately 20 to 57 percent for most pollutants and by 2 percent for oxides of nitrogen (Table 3, *Summerwind Ranch vs. Proposed Project Operational Criteria Pollutant Emissions Summary*).

Table 3
SUMMERWIND RANCH VS. PROPOSED PROJECT
OPERATIONAL CRITERIA POLLUTANT EMISSIONS SUMMARY

Condition	Source	Pollutant (pounds per day)					
		VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summerwind Ranch	Area	45	<0.5	<0.5	<0.5	<0.5	<0.5
	Energy	<0.5	2	1	<0.5	<0.5	<0.5
	Mobile	113	508	1,634	7	112	48
	Total	**158**	**510**	**1,636**	**7**	**113**	**48**
Proposed Project	Area	59	<0.5	<0.5	<0.5	<0.5	<0.5
	Energy	2	18	15	<0.5	1	1
	Mobile	64	478	687	4	65	29
	Stationary	1	2	2	<0.5	<0.5	<0.5
	Total	**127**	**498**	**705**	**4**	**67**	**30**
Net Change (percent)		**-32 (-20%)**	**-12 (-2%)**	**-931 (-57%)**	**-3 (-38%)**	**-46 (-41%)**	**-18 (-37%)**
SCAQMD Thresholds		**55**	**55**	**550**	**150**	**150**	**55**

CalEEMod outputs are provided as Attachment A of the Supplementary Air Quality Analysis.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
SCAQMD = South Coast Air Quality Management District

Although daily operational emissions would be reduced, they would likely remain above SCAQMD significance thresholds and the Project proponent would implement MM AQ4-1, AQ4-2, AQ4-4, and AQ4-5. Specifically, the Project will be responsible for providing the 100 commercial park and ride spaces required by MM AQ4-4, in TC-4 at a future date. MM AQ4-3 addresses consistency with statewide energy construction requirements for water heaters and appliances, which apply to residential construction and are therefore not applicable to the Project. Consistent with the conclusions of the certified EIR, even with these measures, operational emissions of ROGs/VOC, NO_X, CO, and PM_{10} are anticipated to remain significant.

Long-term operational emissions would primarily be generated from diesel-powered trucks visiting the Project site. The operations expected to occur at these facilities would not emit toxic chemicals other than diesel exhaust in any significant quantity. With the conservative modeling technique used (i.e., assuming that an individual stays outdoors at his or her residence 24 hours per day for 30 years, which is the State-required period of time that Health Risk Assessments must use for analysis), the nearest sensitive receptor would be exposed to an incremental inhalation cancer risk of no more than 8.67 in 1 million, which is lower than the SCAQMD CEQA significance threshold of 10 in 1 million. The Chronic Hazard Index would be 0.0085, which is lower than the significance threshold of 1.0.

The cancer burden is an estimate of the number of cancer cases expected from a 30-year exposure to Project TAC emissions. The cancer burden is calculated by multiplying the number of people exposed by the cancer risk at the maximum individual exposed resident, which is 8.67×10^{-6}. In this case, the number of people exposed is the number of people living in the residences within the 1 per 1 million contour. Based on review of the Summerwind Ranch land use plan, it is expected that up to 1,516 dwelling units could be built within the 1 per 1 million contour. Assuming an average household size of 2.88 occupants per dwelling unit, consistent with Table E-2 of Appendix E-2 of the County of Riverside General Plan, the cancer burden is estimated to be 0.0379, which is less than the SCAQMD threshold of 0.5. Thus, no significant health risk would occur from Project-related diesel exhaust.

As determined in the EIR, cumulative construction and operational air quality impacts associated with the proposed Project modifications would remain significant and unavoidable, even with implementation of the applicable mitigation measures.

All air quality mitigation measures contained in the EIR would apply to the Project and would be required to be implemented for this Project, with the exception of MM AQ4-3 and AQ4-5. These two measures would apply only to residential components of the Summerwind Ranch Specific Plan.

Changes in Circumstances/New Information

There are no changes with respect to the circumstances under which the proposed modifications, and there is no new information of substantial importance that has become available relative to air quality. Therefore, no changes in air quality impacts have been identified.

The Summerwind Specific Plan EIR did not model or discuss GHG emissions. Although not discussed specifically, the topic of GHG emissions and the potential effects of GHGs on climate change were generally known prior to certification of the Summerwind Specific Plan EIR in April 2005.

Potential impacts of GHGs on climate change were known as early as the 1970s. A key international milestone was adoption of the United Nations Framework Convention on Climate Change, which was adopted on May 9, 1992. The UNFCCC objective is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." The parties to the convention have met annually since 1995 to assess progress in dealing with climate change. In 1997, the Kyoto Protocol was concluded and established legally binding obligations for developed countries to reduce their GHGs in the period 2008–2012.

In California, Senate Bill (SB) 1771 (Sher), enacted on September 30, 2000, required the Secretary of the Resources Agency to establish a nonprofit public benefit corporation, known as the "California Climate Action Registry," for the purpose of administering a voluntary GHG emission registry. The California Energy Commission (CEC) was required to develop metrics for use by the Registry and to update the state's inventory of GHG emissions by January 1, 2002, and every five years thereafter. In a response to the transportation sector accounting for more than half of California's carbon dioxide (a key GHG) emissions, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493 (also referred to as Pavley or the California Light-Duty Vehicle Greenhouse Gas Standards) required CARB to set statewide GHG emission standards for passenger vehicles and light-duty trucks (and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation) manufactured in model year 2009 and later. In January 2004, Executive Order (EO S-7-04) called for development of a California Hydrogen Blueprint Plan to, among other things, reduce GHG emissions.

Based on the fact that the topic of GHG emissions was likely to have been known by City decision-makers and commenting members of the public at the time that the Summerwind Specific Plan EIR was certified, there is no new information that could not have been known with reasonable due diligence at that time, which indicates that the Project would result in a new significant environmental impact.

Conclusion

Based on the above, no new significant air quality impacts or a substantial increase in previously identified impacts would occur as a result of the proposed modifications. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to

State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Biological Resources

Summary of Previous Analysis

An analysis of biological resources impacts and identified mitigation measures are contained in the EIR, Section 3.3, pages 3.3-1 through 3.3-37. Potentially significant impacts were identified relative to direct, indirect, and cumulative impacts to coastal sage scrub, oak woodland, native riparian woodland (including jurisdictional wetlands), jurisdictional wetland meadow habitat, non-wetland waters of the U.S. and state, sensitive plant species covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), least Bell's vireo, southwestern willow flycatcher, birds listed under the Migratory Bird Treaty Act (MBTA) or Bald Eagle Protection Act (BEPA), habitat for 16 non-listed sensitive wildlife species covered by the MSHCP, and wildlife corridors (MSHCP Proposed Linkage 12 and Proposed Constrained Linkage 23). The EIR contains a series of required standard practices designed to prevent environmental degradation during project construction or operations and maintenance activities, as well as resource-specific mitigation measures MM BR1 through MM BR14, which would reduce the identified significant impacts to below a level of significance.

General Mitigation Measures

The following measures are standard practices designed to prevent environmental degradation during project construction or operations and maintenance activities.

- The construction crew and any contractor(s) should be informed of the biological constraints of the project through a contractor education program presented by a project biologist. The construction crews and contractor(s) would be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas ultimately approved for impacts by the County of Riverside and the resource agencies.

- The anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, should be delineated with stakes and flagging prior to construction to avoid impacts to natural resources where possible. Construction-related activities outside of the impact zone should be avoided.

- New and existing roads that are planned for either construction or widening should not extend beyond the planned impact area. All vehicles passing or turning around should do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route should be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

- Soils should be stockpiled in disturbed areas presently lacking native vegetation. Stockpile areas should be marked to define the limits where stockpiling may occur.

- Best management practices (BMPs) should be employed to prevent further loss of habitat resulting from erosion caused by project-related impacts (i.e., grading or clearing for new roads). All detected erosion should be remedied within two days of discovery.

- Fueling of equipment should take place within existing paved roads or in approved containment areas and not within or adjacent to drainages or native desert habitats. Contractor equipment should be checked for leaks prior to operation and repaired as necessary.

Resource Specific Mitigation Measures

Implementation of the following mitigation measures outlined specifically under the MSHCP (by quadrant number) will reduce the level of impacts to biological resources to less than significant in and adjacent to the project area. Specifically, if a project meets the on-site MSHCP conservation objective, then additional mitigation off-site is not required. The MSHCP conservation objectives by Area Cell are depicted in Table 3.3-4 below and are described in further detail below for each impact expected from the proposed project. The Oak Valley Town Center site is not located within any MSHCP criteria cells.

Summerwind Ranch EIR Table 3.3-4
CRITERIA AREA CELL CONSERVATION REQUIREMENTS OF THE MSHCP WITHIN THE PROPOSED PROJECT

Criteria Area Cell (Quadrant Number)	MSHCP Conservation Amount and Focus Area of Cell	Approx. Percentage of Cell Conserved by Project	Project Meets Conservation Requirements	Explanation
396	55-65% in central portion of cell for upland conservation for assembly of Linkage 23.	95%	Yes	All areas on-site are preserved.
411	30-40% in northern portion of cell for upland conservation (grassland and chaparral) for assembly of Linkage 23.	10%	Yes	Portion of cell is not in the project site. Garden Air Wash corridor (Proposed Constrained Linkage 23) mitigated consistent with MSHCP.
412	35-45% in northern portion of cell for upland s and woodlands conservation for assembly of Linkage 23.	45%	Yes	Garden Air Wash corridor onsite preserved (Proposed Constrained Linkage 23).
417	25-35% in northern portion of cell for upland conservation (grassland and chaparral) for assembly of Linkage 23.	25%	Yes	Garden Air Wash corridor onsite preserved (Proposed Constrained Linkage 23).
479	55-65% in eastern and southern portion of cell for uplands and a small riparian/woodland area conservation associated with San Timoteo Creek for assembly of Linkage 23.	50%	Yes	Portion of cell is not in the project site. Entire project area within cell is preserved.
480	20-30% in northwestern portion of cell for upland conservation for assembly of Linkage 23.	50%	Yes	Garden Air Wash and Riverside Land Conservancy option lands are preserved.

Summerwind Ranch EIR Table 3.3-4 CRITERIA AREA CELL CONSERVATION REQUIREMENTS OF THE MSHCP WITHIN THE PROPOSED PROJECT				
Criteria Area Cell (Quadrant Number)	**MSHCP Conservation Amount and Focus Area of Cell**	**Approx. Percentage of Cell Conserved by Project**	**Project Meets Conservation Requirements**	**Explanation**
569	30%-40% in central portion of cell for grasslands and riparian woodlands conservation associated with San Timoteo Creek for assembly of Linkage 12.	30%	Yes	Portion of cell is not within the project site.
572	20-30 % in southern portion of cell for grassland conservation for assembly of Linkage 12.	20%	Yes	San Timoteo Wash is preserved.
662	35-45% in northeastern portion of cell for upland conservation (grassland and chaparral) for assembly of Linkage 12.	10%	Yes	Portion of cell is not in the project site. Entire project area within cell is preserved.
663	60-70% in central portion of cell for upland conservation (grassland, coastal sage scrub, and chaparral) for assembly of Linkage 12.	45%	Yes	Portion of cell is not in the project site. Entire project area within cell is preserved.

MM BR1 Permanent direct impacts to 99.3 acres of coastal sage scrub will be offset by compliance with the mitigation requirements listed under the Multiple Species Habitat Conservation Plan (MSHCP). These requirements include on-site preservation of coastal sage scrub habitat. The proposed plan preserves all of the coastal sage scrub habitat on the project site that is within Criteria Cells, which includes approximately 135.4 acres of coastal sage scrub habitat.

MM BR2 Mitigation requirements to minimize permanent direct impacts to 20.8 acres of oak woodlands would involve actions prior to and during construction:

- Prior to issuance of grading permits, on-site preservation shall be implemented in compliance with MSHCP standards for Criteria Area Cells and implementation of an oak tree planting and restoration plan. Approximately 129.6 acres of oak woodland habitat would be preserved on site.

- During construction, oak trees shall be planted from container stock as well as from acorns collected on the site to ensure that the regenerated oak seedlings will have the best genetic adaptation for the Summerwind Ranch development. The Applicant will plant 976 oak trees using a combination of 50 percent acorns and 50 percent deep one-gallon containers as mitigation for the removal of up to 236 oak trees, as shown in Table 3.3-5. The planting program reduces the impact of loss of oak woodland and oak trees to less than significant.

MM BR3 Mitigation requirements to offset permanent direct impacts to 0.3 acre of riparian woodlands would include on-site or off-site habitat creation or enhancement. Regulatory agencies will establish appropriate mitigation ratios in accordance with their policy of no net loss of riparian and wetland values.

MM BR4 Mitigation recommendations for potential permanent impacts to vegetation communities will be satisfied by applying a native seed mix in the bare areas that are not subject to slope restoration after construction is complete to minimize the potential for exotic species introductions. The native seed mix shall be as specified by a qualified biologist/restoration specialist. In jurisdictional areas, seed mixes would be approved by the appropriate regulatory agency.

MM BR5 Mitigation requirements to offset permanent direct impacts to jurisdictional wetlands will be met by a combination of wetland creation, restoration, or enhancement. The mitigation site should be preserved at a suitable area near the impact area. Mitigation requirements for permanent impacts to jurisdictional wetlands resulting from project-related construction would be determined during the regulatory agency permit process at mitigation ratios consistent with the policy of no net loss of wetland values.

MM BR6 Mitigation requirements to offset permanent direct impacts to jurisdictional wetlands will be met by a combination of wetland creation, restoration, or enhancement. The mitigation site should be preserved at a suitable area near the impact area. Mitigation requirements for permanent impacts to jurisdictional wetlands resulting from project-related construction would be determined during the regulatory agency permit process at mitigation ratios consistent with the policy of no net loss of wetland values.

MM BR7 Mitigation requirements for permanent direct impacts to ephemeral and intermittent drainages would require habitat creation, enhancement or restoration, and preservation at a location approved by the resource agencies through the permitting process.

MM BR8 Mitigation recommendations for potential permanent indirect impacts to wetland habitats will be satisfied by implementation of a Habitat Monitoring Program adequate to prevent a net loss of wetland.

MM BR9-1 Mitigation requirements for permanent direct impacts to the least Bell's vireo and southwestern willow flycatcher habitat will be met through on-site preservation in Criteria Area Cells (Quadrant 479) outlined in Table 3.3-4. This habitat preservation is coincident to the riparian habitat preservation listed in MM-BR3.

MM BR9-2 Preconstruction surveys for least Bell's vireo and southwestern willow flycatcher will be conducted prior to construction in or adjacent to habitat areas in accordance with the applicable protocol. Based on the protocol survey results, appropriate avoidance measures would be determined through consultation with regulatory agencies.

MM BR10 To avoid or minimize impacts to birds covered under the MBTA and/or BEPA, the following will be implemented:

- Clearing and grubbing of vegetation within areas identified as habitat subject to these acts should be conducted outside the March 15 through August 15 nesting season.

- If clearing and grubbing must occur within habitats during the breeding season, preconstruction nest surveys shall be conducted by a qualified biologist no more than one week prior to initiation of construction. The biologist shall identify those areas where clearing and grubbing are to be avoided in order to avoid destruction of nests.

- In the event that least Bell's vireo or southwestern willow flycatcher is found on-site during future surveys, ensure that noise from construction activities does not exceed 60 dBA L_{EQ} within the occupied habitat of the species during the nesting season.

- Position, direct, and shield lights (streetlights, parking lot lighting, and other project-related illumination sources) so as to avoid "light spill" into the proposed on-site conservation areas or into habitat adjacent to the proposed project site. Night lighting used during the course of construction shall be directed away from onsite habitat conservation areas and offsite properties.

- Provide contractor education and erect fencing or barriers to ensure that contractors do no enter areas of open space or conserved habitat for any purpose except for enhancement projects permitted by the Specific Plan or activities that are otherwise permitted or required for implementation of EIR mitigation measures.

- If construction must occur within or adjacent to these habitats during the breeding season, preconstruction nest surveys shall be conducted by a qualified biologist no more than 1 week prior to construction initiation. The biologist shall identify those areas where construction is to be avoided in order to avoid destruction of nests.

- Preconstruction surveys shall be performed in appropriate habitat areas consistent with requirements of the MSHCP, for the western yellow-billed cuckoo and burrowing owl. Mitigation consistent with MSHCP requirements will be implemented if warranted by survey results.

MM BR11 Indirect impacts to least Bell's vireo and southwestern willow flycatcher habitat will be addressed through on-site preservation coincident to the riparian habitat preservation listed in MM-BR3.

MM BR12 Mitigation measures for indirect impacts to the 16 sensitive and covered species present on-site will be met through the extensive in-kind preservation outlined in Table 3.3-4 and through compliance with other requirements of the MSHCP. For instance, Yucaipa onion and many-stemmed dudleya are not expected to occur on the site; however, focused surveys will be conducted in appropriate habitat during proper time of year. If these species are found on-site, appropriate mitigation will be implemented upon concurrence by regulatory agencies.

MM BR13 Mitigation requirements to offset project impacts to wildlife corridors, listed under the MSHCP, include the proposed habitat preservation of open space along Proposed Linkage 12 and Proposed Constrained Linkage 23 within the project Criteria Area Cells. The dedication of land for wildlife conservation, including the Garden Air Wash and other lands, partially achieves this objective. Further enhancement of the corridors and habitat linkages will require installing properly-sized passageways under new on-site roads.

MM BR14 Same as MM-BR13, above.

Mitigation requirements to offset project impacts to wildlife corridors, listed under the MSHCP, include the proposed habitat preservation of open space along Proposed Linkage 12 and Proposed Constrained Linkage 23 within the project Criteria Area Cells. The dedication of land for wildlife conservation, including the Garden Air Wash and other lands, partially achieves this objective. Further enhancement of the corridors and habitat linkages will require installing properly-sized passageways under new on-site roads. Several of these measures (EIR Table 3.3-4 and MM BR1, BR9-1, BR11, BR13, and BR14) require conservation of on-site habitat and have already been fulfilled through sale of land and conveyance through a grant deed to Rivers and Lands Conservancy (RLC). The EIR concluded that these mitigation measures would reduce impacts to sensitive biological resources to below a level of significance.

Analysis of the Proposed Modifications

A field visit was conducted in April 2020 by biologists from HELIX Environmental Planning to confirm current biological conditions within the Project site. The proposed modifications to the boundary of the open space along the southern edge of the site would not result in additional impacts to sensitive vegetation communities or species. Although the open space area would be narrowed in some locations relative to the previously planned boundary, it would be widened in others. Wildlife movement in this area is primarily constricted upstream of the proposed modifications by existing improvements; therefore, the proposed modifications would not result in a new significant impact to wildlife movement. Wildlife movement in the area primarily occurs along Garden Air Wash to the north of the site and the dedicated open space to the west, as identified on Figure 4 of the Biological Resources Assessment prepared for the Summerwind Ranch EIR (LSA 2004a). The addition of open space along a drainage that occurs at the southern boundary of TC-4 would incrementally improve opportunities for wildlife movement. The other proposed modifications would not meaningfully alter other biological impacts relative to those identified in the previously certified EIR.

Current biological resource conditions on site are generally similar to those identified in the EIR. The information presented in the EIR with regard to oak woodland is somewhat inconsistent, with several areas of oak woodland mapped within the Town Center impact footprint on Figure 2 of the Biological Resources Assessment, but Table 3.3-3 of the EIR indicating that only one oak tree would be impacted in this area. The distribution of oak woodland is somewhat less than what was mapped in the previous Biological Resources Assessment, and a limited number of oak trees would be impacted. A small increase in the number of individual oak trees impacted relative to the impacts disclosed in the EIR (especially coupled with a decrease in impact to mapped oak woodlands) would not constitute a substantial increase in the severity of this previously identified significant impact. Preservation of oak trees has been implemented in compliance with MSHCP standards for Criteria Area Cells, but implementation of an oak tree planting and restoration plan also would be required in accordance with MM BR2. As noted above, MM BR1, BR9-1, BR11, BR13, and BR14, which require conservation of on-site

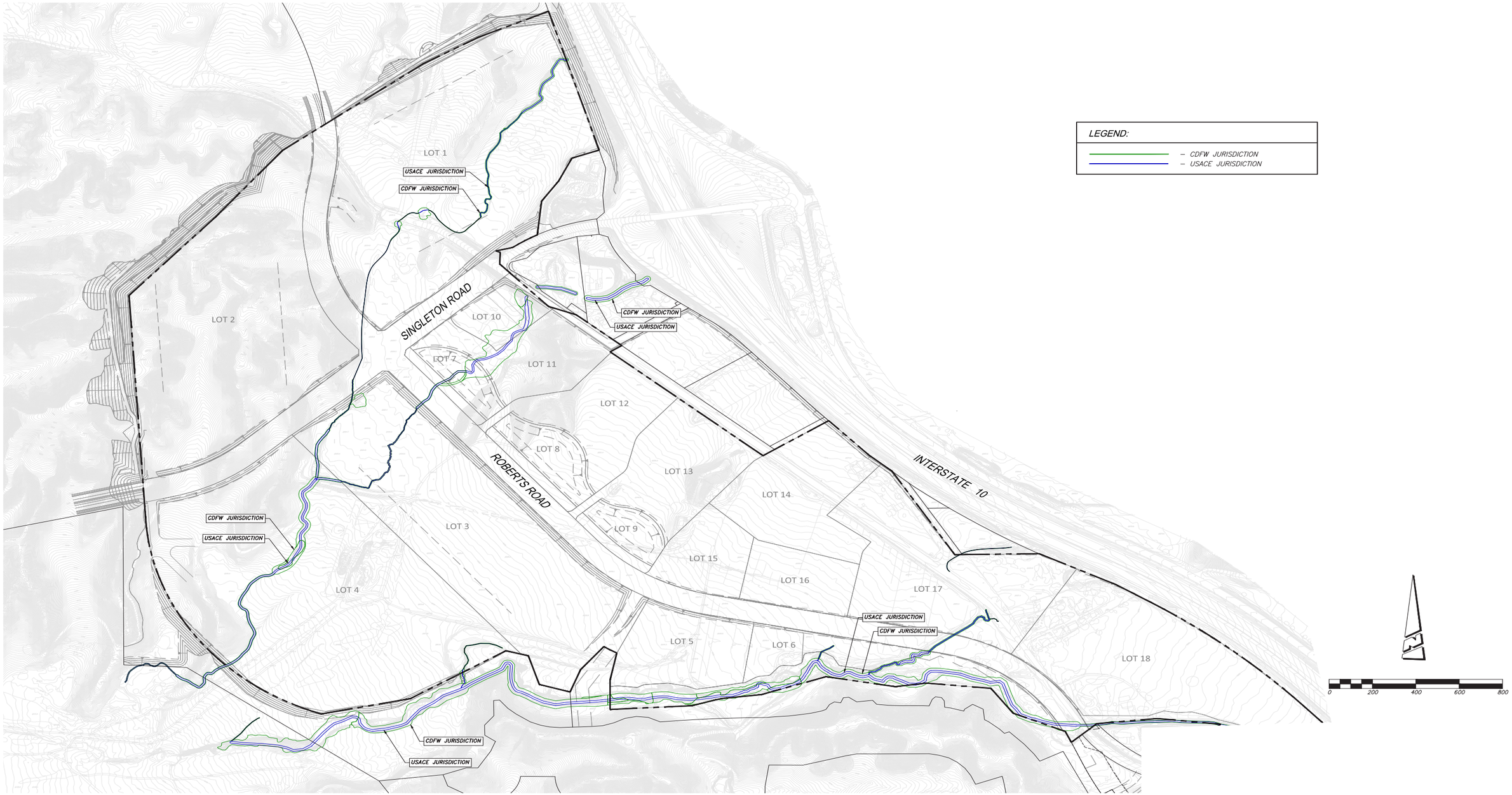
habitat, have already been fulfilled through sale and conveyance through a grant deed of the required land to RLC; therefore, these requirements are not applicable to the Project. Based on mapping in the previous Biological Resources Assessment (LSA 2004a) and confirmed during the recent site visit, there is no wet meadow present on the site of the currently proposed Project; therefore, MM BR6, which is specific to this habitat type, does not apply to the Project (although it would continue to apply to other portions of the Summerwind Specific Plan). MM BR12 requires compliance with MSHCP requirements, including conservation of habitat as well as surveys for Yucaipa onion and many-stemmed dudleya in appropriate habitat. Table 3.3-2 of the EIR did not identify clay soils on site capable of supporting these species. This was confirmed during the recent field visit; therefore, field surveys for these species are not required. The Project would be subject to the Determination of Biologically Equivalent or Superior Preservation process to confirm consistency with all applicable MSHCP requirements.

Subsequent to the 2005 approval of the Specific Plan (SP-1, A1), a Clean Water Act Section 404 permit and Section 401 water quality certification, as well as a California Fish and Game Code Section 1602 Streambed Alteration Agreement, were issued for Phase I (Tract 32702) of the Summerwind Specific Plan. These permits included authorization for impacts to the drainage course along the southern edge of TC-3 for the Paseo trail, as well as for the Roberts Road crossing. Those impacts and associated mitigation requirements have been completed. Impacts to jurisdictional resources not addressed through this prior permitting effort would occur through implementation of the Project. As a result, an updated jurisdictional delineation has been prepared and new permits will be required, consistent with MM BR7. No additional impacts to jurisdictional resources would result from the proposed project modifications.

Except as noted above, the other mitigation measures identified in the EIR are applicable to the Project and would be required to be implemented. Implementation of these mitigation measures and compliance with applicable regulations would reduce impacts to biological resources from the proposed modifications to less than significant.

Changes in Circumstances/New Information

As described above, current biological resource conditions on site are generally similar to those identified in the EIR. As noted above, permits were previously issued for impacts to jurisdictional waters for the Roberts Road crossing and development of the paseo along the southern edge of the site, in conjunction with development of a prior phase of the Summerwind Ranch Specific Plan. These impacts have been completed and associated mitigation requirements fulfilled. The Project would result in impacts to drainage features that were not included as part of this previous permitting effort. In accordance with MMRP requirements, the Project will be required to submit a current jurisdictional delineation based on updated agency standards, and to comply with current agency permitting and mitigation requirements, which are more stringent than those that were in place at the time of EIR certification. The updated delineation, subject to verification by the resource agencies, is illustrated on Figure 6, *Jurisdictional Delineation*. The current delineation shows potential jurisdictional resources in addition to those that were mapped on Summerwind Ranch Biological Technical Report Figure 3, *Specific Plan Effects to Potential Waters of the U.S.* The locations of the newly delineated drainages are, however, generally consistent with drainages that were illustrated on Specific Plan Figure III-11, *Master Drainage Plan*, and that are visible in review of 1996 aerial photography of the site. Therefore, the presence of these drainages does not comprise "[N]ew information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified." To the contrary, drainages in these locations were planned to be disturbed



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Source: Proactive Engineering Consultants West 2020

at the time of EIR certification. Impacts to them would not be new impacts that were not previously contemplated. There are no changes in circumstances or new information of substantial importance that indicates that the Project would result in new significant impacts or a substantial increase in the severity of previously identified significant impacts.

Conclusion

The EIR concluded that significant direct, indirect, and cumulative impacts to biological resources could occur. Some of these impacts would occur in association with development of the Project. These impacts would be reduced to below a level of significance through the implementation of mitigation measures previously identified in the EIR. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Cultural and Paleontological Resources

Summary of Previous Analysis

Analysis of cultural resources impacts is contained in the EIR, Section 3.4, pages 3.4-1 through 3.4-7. Twelve cultural resources were identified within the Summerwind Ranch Specific Plan area, of which four resources (LSA-SIC-337-S-1, LSA-SIC-337-S-6, LSA-SIC-337-S-9, and LSA-SIC-337-S-10) within the approved impact area were determined to be significant resources under CEQA. Therefore, direct impacts to those four resources were determined to be significant. Sites LSA-SIC-337-S-1 and LSA-SIC-337-S-9 are located to the west of the Town Center. Site LSA-SIC-337-S-6, part of the Singleton Ranch Complex and Isolate LSA-SIC337-I-2, which is also part of the complex, as well as a segment of LSA-SIC-337-S-10, a historic water conveyance feature, are located within the Project site. Although an additional culturally sensitive site (CA-RIV-7296) was identified outside of the impact area evaluated in the EIR, indirect impacts associated with potential future vandalism were considered potentially significant based on the proximity of proposed development to the site. This site is located substantially west of (not adjacent to) the Town Center. Additionally, although isolates are not considered significant under CEQA, mitigation for disturbance of an isolated pestle (Isolate LSA-SIC-337-I-3) observed within the Town Center was nonetheless recommended. Mitigation requirements are detailed in EIR Table 3.4-2. The Location column of the table has been updated to indicate whether the site is located in the 2005 SP Area or the current Project Area, and revised to correctly indicate that Isolate LSA-SIC-337-I-3 is within the Town Center impact area.

Summerwind EIR Table 3.4-2 (as modified) CULTURAL RESOURCES MITIGATION MEASURES			
Resource	**Description**	**Location**	**Mitigation Measure**
CA-RIV-7296	Historic ranch complex	2005 SP preservation area	Security fencing
LSA-SIC-337-S-1	Historic refuse	2005 SP impact area	Phase II test excavations
LSA-SIC-337-S-6	Will Singleton Farm complex	Current impact area	Evaluation, including research and oral histories
LSA-SIC-337-S-9	Historic refuse deposit	2005 SP impact area	Phase II test excavations
LSA-SIC-337-S-10	Historic water conveyance feature	2005 SP and Current impact area (various portions)	Focused, intensive surveys; possibly Historic American Engineering Record documentation
LSA-SIC-337-I-3	Prehistoric isolated pestle	Current impact area	Collect and donate to a local historical society
Singleton Ranch Historic District		2005 SP and Current impact area (various portions)	Production of a popular history

The EIR concluded that implementation of these mitigation measures would reduce impacts to historic and prehistoric resources to below a level of significance.

The paleontological investigation prepared in support of the EIR determined that significant paleontological resources were present in the Summerwind Ranch Specific Plan area, with potential impacts identified as significant. MM CR2-1 through CR2-6 were required to reduce the impacts.

MM CR2-1 Preconstruction salvage of known exposed cultural resources shall be conducted.

MM CR2-2 Preconstruction field examination of fossil soil horizons with high potential for paleontological resources, and salvage of fossils as necessary shall be conducted.

MM CR2-3 A project specific sampling plan that will recover standard samples of fossiliferous paleosols in stratigraphic succession within the affected areas shall be developed. The sampling program will include 12 samples from the San Timoteo Formation and three from younger sediments. These samples will be prepared by water-washing through 20 and 30 mesh screens.

MM CR2-4 Excavation in sediments with undetermined potential shall be monitored 50 percent of the time; and if paleontological resources are identified, monitoring shall be changed to full time. Monitors shall be empowered to temporarily redirect earthmoving equipment while fossils are examined and removed. If multiple pieces of earthmoving equipment are working simultaneously or if excavation is conducted in widely separated areas, additional monitors shall be provided as necessary.

MM CR2-5 Fossils collected during the project shall be prepared to a reasonable point of identification. The samples shall be cleaned of excess sediment or matrix and housed in an accredited museum repository. A written fossil specimen repository agreement shall be arranged in advance of excavation monitoring.

MM CR2-6 A report documenting the results of the monitoring and salvage shall be prepared.

The EIR concluded that these measures would reduce potential impacts to below a level of significance.

Analysis of the Proposed Modifications

The Project would not result in additional impacts to identified significant cultural resources. The change in land uses would not alter the previously identified impacts to cultural resources in the EIR, and modifications to the open space boundary along the southern border associated with the Project would not result in additional impacts to known cultural resources as documented in the site records included in the Cultural Resource Assessment prepared for the Summerwind Ranch EIR (LSA 2004b). The Project would result in impacts to Site LSA-SIC-337-S-6 and associated Isolate LSA-SIC337-I-2; a segment of Site LSA-SIC-337-S-10; and Isolate LSA-SIC-337-I-3, consistent with the impacts disclosed in the prior EIR. The Project would be required to implement mitigation requirements for these features as detailed above. Given the passage of time, it is unknown whether the granite pestle isolate is still present and can be located, and donation to a local historical society may no longer be considered the appropriate disposition of the prehistoric artifact. If the resource can be found, the City will coordinate with consulting tribes to determine the appropriate disposition of the artifact. The Project would not be subject to the other mitigation requirements identified in Summerwind EIR Table 3.4-2, as the associated resources are located outside of the Town Center.

The proposed General Plan Amendment and Specific Plan Amendment trigger Native American consultation in accordance with the requirements of California SB 18. On March 23, 2020 the City of Calimesa sent out 15 letters to Native American Tribes from the Native American Heritage Commission SB 18 list identifying the opportunity to consult on the Project. An email was received from the San Manuel Band of Mission Indians identifying that the tribe has no concerns with the proposed SPA, and does not elect to consult on this Project. On May 4, 2020, the City received a letter from the Agua Caliente Band of Cahuilla Indians requesting a records search, cultural inventory by a qualified archaeologist, copies of site records, and the presence of an Agua Caliente Native American Cultural Resource Monitor during any ground disturbing activities. A letter dated July 9, 2020 was received from the Soboba Band of Luiseño Indians requesting consultation, and a letter dated July 30, 2020 was received from the Morongo Band of Mission Indians requesting consultation. These requests for Native American monitoring have been incorporated into the Specific Plan as part of the Project's efforts to promote an integrated, responsible land use plan. They neither result from, nor would result in, new or substantially more severe significant environmental impacts than were disclosed in the certified EIR.

The proposed modifications would incrementally decrease the amount of formational material with potential to contain sensitive paleontological resources that would be disturbed, because the amount of open space would be slightly increased. Upon implementation of MM CR2-1 through CR2-6 as identified in the EIR, potential impacts to sensitive paleontological resources would be reduced to below a level of significance.

Changes in Circumstances/New Information

There have been no substantial changes in cultural and paleontological resource conditions within the area of the proposed modifications since the time of certification of the EIR. Additionally, no new information of substantial importance regarding cultural and paleontological resources has become available. Therefore, no changes in circumstances and no new information of substantial importance relative to cultural or paleontological resources have been identified.

Conclusion

None of the proposed modifications involve new significant impacts or a substantial increase in previously identified significant impacts related to cultural and paleontological resources. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding cultural and paleontological resources which was not known and could not have been known when the EIR was adopted has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Geology/Soils

Summary of Previous Analysis

Analysis of geology/soils impacts is contained in the EIR, Section 3.5, pages 3.5-1 through 3.5-9. The EIR identified potentially significant impacts related to ground stability during seismic events, including liquefaction, subsidence, and landslides. The EIR includes MM GS1-1 through GS1-3 and GS2-1 through GS2-4.

MM GS1-1 The removal of all topsoil, partially saturated alluvium, colluvium, and highly weathered older alluvium and San Timoteo Formation shall be required under all structural fill areas from an estimated range of 1 to 40 feet.

MM GS1-2 Unsuitable soils shall be excavated and compacted using conventional grading techniques.

MM GS1-3 Post-Tensioned slab/foundation systems shall be used for all structures to be constructed over areas of shallow groundwater and left-in-place alluvium.

MM GS2-1 Proper grading in accordance with the State of California Special Publication 117 shall be required of all sloped terrain.

MM GS2-2 Conventional shallow foundations and slab-on-grade or post-tensioned slab/foundations shall be utilized for single-family residential structures.

MM GS2-3 Project mass grading and rough grading for individual development projects shall be done in conformance with a detailed Geotechnical and Soils Engineering Study. The study shall be approved by the City Engineer prior to issuance of grading permits and shall address potential hazards associated with groundshaking, secondary seismic hazards, slope stability, and public safety. Such studies shall:

- Conform to code requirements, standards and guidelines of the City of Calimesa;
- Fully and accurately reflect site conditions and hazards; and
- Include all mitigation measures necessary for reducing risks posed by geologic hazards on the project site.

MM GS2-4 All site grading shall be accomplished under the supervision of certified engineering geologist.

The EIR concluded that these mitigation measures, which would require that appropriate design features be incorporated into the proposed project plans and specifications; would reduce impacts to below a level of significance.

Analysis of the Proposed Modifications

The proposed project modifications would not substantially alter impacts related to geology or soils. MM GS2-2 of the EIR only applies to residential structures and thus is not applicable to the proposed Project. Similarly, MM GS1-3 only applies along the western edge of the site and thus is not applicable to the proposed Project. These measures would remain applicable to other portions of the Summerwind Specific Plan. As mandated by MM GS2-3 in the EIR, a site-specific, detailed Geotechnical and Soils Engineering Study would be prepared for the Project site in conjunction with the future Development Plan Review and CUP submittal. Recommendations from this report would be incorporated into the design and construction of the project to address potential geologic and soil hazards, to the satisfaction of the City. Therefore, impacts related to geology and soils from the proposed modifications would be reduced to below a level of significance through the applicable mitigation measures required by the EIR and no further mitigation is required.

Changes in Circumstances/New Information

There have been no substantial changes in geology and soil conditions within the area of the proposed modifications since the adoption of the EIR. Additionally, no new information of substantial importance regarding known geological and soil hazards, conditions, or resources has become available. Therefore, no changes in circumstances and no new information of substantial importance relative to geology and soil resources have been identified.

Conclusion

None of the proposed modifications involves new significant impacts or a substantial increase in previously identified impacts related to geology and soils within the EIR. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding geological resources which was not known and could not have been known when the EIR was adopted has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Hydrology/Water Quality

Summary of Previous Analysis

Analysis of hydrology and water quality impacts are contained in the EIR, Section 3.6, pages 3.6-1 through 3.6-9. The EIR concluded that the project had the potential to result in significant impacts related to surface drainage during construction, as well as operational impacts related to increased runoff and erosion due to increased impermeable surfaces. The EIR requires implementation of MM HW1-1 and HW1-2.

MM HW1-1 Construction and development of all phases shall comply with the National Pollutant Discharge Elimination System (NPDES) regulations. Prior to the issuance of a grading permit, applicants shall demonstrate compliance with NPDES Storm water Permit requirements to the satisfaction of the City of Calimesa. Applicable BMP provisions as developed through the specific plan drainage concept and City requirements shall be incorporated into the NPDES Permit.

MM HW1-2 Individual projects within the specific plan area shall be reviewed by the City of Calimesa for the inclusion of appropriate structural and non-structural BMPs to control storm water discharges and protect water quality. Structural controls may include, but are not limited to filtration, common area efficient irrigation, common area runoff-minimizing landscape design, velocity dissipation devices, oil/grease separators, inlet trash racks, and catch basin stenciling. Non-structural BMPs can include education for property owners, tenants and occupants, activity restrictions, common area landscape management, litter control, and catch basin inspection, BMP maintenance; and street sweeping.

The following are examples of BMPs that may be included within NPDES permit requirements for individual projects:

- Use of sand bags and temporary desilting basins during project grading and construction during the rainy season (October through April) to prevent discharge of sediment-laden runoff into storm water facilities.

- Installation of landscaping as soon as practicable after completion of grading to reduce sediment transport during storms. Or application of approved soil binders on graded building pads if they are not built upon before the onset of the rainy season.

- Incorporation of structural BMPs (e.g., grease traps, debris screens, continuous deflection separators, oil/water separators, drain inlet inserts) into the project design to provide detention and filtering of contaminants in urban runoff from the developed site prior to discharge to storm water facilities.

The City shall review subsequent development projects within the specific plan area for the application of BMPs to reduce water pollution from urban runoff. The specific measures to be applied shall be determined in conjunction with review of required project hydrology and hydraulic studies, and shall conform to City standards and any Drainage Area Management Plan under the NPDES program.

These measures require demonstration of compliance with National Pollutant Discharge Elimination System (NPDES) regulations and inclusion of appropriate structural and non-structural BMPs to control storm water discharges and protect water quality, with specific measures to be determined in conjunction with review of required project hydrology and hydraulic studies and in conformance with City standards and any Drainage Area Management Plan under the NPDES program. Based on the implementation of these mitigation measures, impacts related to hydrology and water quality were determined to be less than significant.

Analysis of the Proposed Modifications

The proposed project modifications would not substantially alter impacts related to hydrology and water quality. Construction activities would be consistent with those previously anticipated and therefore would not result in increased impacts. The Project would increase on-site open space by 0.6 acre, incrementally decreasing the amount of impervious surfaces that would be constructed on the site. The reduction in impervious surfaces would also incrementally decrease associated runoff and potential erosion. Necessary drainage improvements would be designed to properly convey the calculated peak 100-year flow rates from the Project site and off-site watershed areas. The previously approved Specific Plan envisioned the inclusion of a detention basin within the natural streambed area to mitigate the majority of first flush flows. Consistent with current regulatory procedures (such as the Riverside County Municipal Separate Storm Sewer System [MS4] stormwater treatment requirements), the amended Specific Plan instead calls for the development of five water quality basins to mitigate first flush flows. These basins have been designed to be compatible with the natural drainage course while minimizing grading impacts. Each parcel within the Project would be responsible for providing stormwater treatment for itself. Stormwater treatment for the Project's backbone street improvements would be accomplished via BMP catch basin inserts or equivalent BMP mitigation measures within the backbone right-of-way. The proposed storm drain system would maintain the existing drainage patterns and outlet drainage into the natural streambed areas leading to San Timoteo Creek.

As noted above, MM HW1-1 and MM HW1-2 require project-specific demonstration of conformance with applicable requirements through project design, NPDES compliance, and preparation of hydrology and hydraulic studies. Additionally, the City requires preparation of a project-specific Water Quality Management Plan to determine applicable features. Implementation of the EIR mitigation measures, including preparation of the noted studies, incorporation of their recommendations, and subsequent preparation and implementation of a project-specific Storm Water Pollution Prevention Plan would reduce potential impacts to hydrology and water quality below a level of significance.

Changes in Circumstances/New Information

There have been no substantial changes in hydrology or water quality conditions within the Project area of the proposed modifications since the time of the certification of the EIR. Additionally, no new information of substantial importance regarding hydrology or water quality has become available. The regulations addressing these issue areas have become more stringent and the project would be required to comply with the regulations in effect at the time of development. Therefore, no changes in circumstances and no new information of substantial importance that would result in increased impacts relative to hydrology or water quality have been identified.

Conclusion

None of the proposed modifications would involve new significant impacts or a substantial increase in previously identified impacts related to hydrology and water quality. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding hydrology and water quality which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Land Use and Planning

Summary of Previous Analysis

Analysis of land use and planning impacts is contained in EIR Section 3.7, pages 3.7-1 through 3.7-6. The analysis contained therein concluded that impacts related to land use and planning would be less than significant. Therefore, no mitigation measures were required.

Analysis of the Proposed Modifications

In conjunction with the proposed Specific Plan revisions, amendments to the General Plan also would be necessary. These amendments would be limited to revisions to the General Plan land use map, transportation map, and trail exhibit to reflect the Specific Plan modifications. The proposed Project include minor changes to the quantities and distribution of land uses on the site and, as detailed throughout this Addendum, would not result in new significant environmental impacts.

Specifically, the proposed revisions would decrease business park land uses within the SP-1, A2 area from 121.1 to 119.6 acres, a decrease of approximately 1.5 acres, and increase commercial land uses from 86.0 to 88.7 acres, an increase of approximately 2.7 acres. As components of the entirety of Summerwind Ranch land uses analyzed in the EIR, these changes are relatively minimal. Elimination of the previously planned equestrian trail and replacement with a paseo trail is necessary, due to potential safety concerns that would be associated with an equestrian trail adjacent to an arterial road with freeway access and a projected 43,000 ADT. Also, the request to modify the maximum warehouse size from 250,000 SF to 707,000 SF is made in response to an ordinance that the City adopted in adopted in 2016 (Ordinance. 343), subsequent to approval of the Summerwind Specific Plan (refer to Changes in Circumstances/New Information for additional discussion).

Specific Plan (SP-1, A2) Section VIII includes the following detailed analysis of how the revisions would be consistent with General Plan policies.

1. <u>Land Use</u>

- **Goal LU-1:** *Preserve and enhance the small-town atmosphere of Calimesa***.**

  Specific Plan Consistency: Oak Valley Town Center will provide a pedestrian friendly gathering place similar to a "Main Street" found in small towns across America. Community activities will take place here such as farmer's markets, concerts, a city hall and other seasonal celebrations to bring the community together. Public views in the town center area will be oriented toward the lake and commercial area with business park edges screened and landscaped.

- **Goal LU-2:** *A logical and efficient pattern of development that reduces infrastructure costs and maintains the character of Calimesa.*

  Specific Plan Consistency: The development pattern of Oak Valley Town Center is designed to be at a higher density and intensity closest to the I-10 freeway with less intensive uses being located concentrically away from the freeway. Road patterns and infrastructure responds to proximity to the freeway for efficiency. Clustering non-residential uses in the town center with business and commercial uses is a logical and efficient land use pattern. Commercial uses are located in close proximity to the freeway for ease of access. Business park and warehouse

employment uses are located concentrically around the commercial center to consolidate infrastructure and provide walking distance proximity to commercial and residential uses.

- **Goal LU-3:** *An arrangement of land uses that achieves maximum compatibility between land uses and especially with existing neighborhoods.*

  Specific Plan Consistency: The arrangement of land uses consists of a central town center and commercial, then business park uses with higher to lower density residential uses concentrically away from the central core. A natural open space corridor with a pedestrian walking paseo is planned along the southern side of the town center provides a buffer to single family neighborhoods. Higher density residential uses are located along the northern side of the town center transitioning to lower densities to the north and northwest. A significant vertical slope with an expansive 32-foot vegetative buffer and minimum 14-foot sound wall provides separation and assures compatibility with planned multi-family residential along the northern slope and business park edge.

- **Goal LU-4:** *Commercial and industrial development that serves the needs of Calimesa and the surrounding area, provides local job opportunities, and creates a greater job/housing balance.*

  Specific Plan Consistency: Oak Valley Town Center will help to provide local job opportunities for residents in Calimesa. Commercial, office, light industrial and public facility uses are proposed that will be within close proximity to not only existing and future residents of Summerwind Ranch but also residents within the City of Calimesa as a whole. The business park use provides for an increased opportunity for employment in close proximity to housing and shopping areas in the commercial core and assists in the City's objectives of providing more job opportunities within the housing rich/jobs deficient City of Calimesa.

2. <u>Transportation and Mobility</u>

- **Goal TM-1:** *A transportation system that ensures the safe and efficient movement of people and goods throughout the city.*

  Specific Plan Consistency: The transportation system provides an efficient hierarchy of arterial, major and minor roads for the movement of cars, bicycles and pedestrians. The alignment of Roberts Road provides movement to northwest and southeast villages and neighborhoods parallel to the I-10 freeway. Singleton Road provides the same efficient movement in a northeast/southwest direction. Street cross sections and designs are designed for the efficient movement for cars with safe sidewalks and trails for pedestrians and bicyclists.

- **Goal TN-2:** *Public transit services, trails, paths, and pedestrian amenities that promote the mobility of Calimesa residents and provide a reasonable alternative to the personal automobile.*

  Specific Plan Consistency: Streets, trails and paths provide for connections from surrounding villages and neighborhoods to Oak Valley Town Center providing alternative modes of transportation.

- **Goal TM-3:** *Seek to establish an area-wide multi-use system of pedestrian, equestrian, hiking, and bicycling trails, with linkages to parks and the trail systems of adjacent jurisdictions.*

Specific Plan Consistency: A network of carefully planned pedestrian, equestrian, hiking and bicycle trails provide linkages to Oak Valley Town Center, surrounding residential areas, natural and amenity oriented open space areas and beyond with connections to regional trails.

- **Goal TM-4:** *Promote mobility for the disabled, in accordance with state and federal law.*

  Specific Plan Consistency: All public trails and public spaces will comply with the American Disabilities Act to provide mobility for the disabled.

3. Infrastructure and Public Services

- **Goal IPS-1:** *Ensure that existing and future land uses have an adequate water supply system.*

  Specific Plan Consistency: A Master Water Plan was designed to accommodate the Summerwind Ranch at Oak Valley community's domestic water demand. A domestic water demand study was conducted based on the Yucaipa Valley Water District (YVWD) Water Master Plan and Water System Design Criteria for New Development.

- **Goal IPS-2:** *Ensure that existing and future land uses have a safe and efficient wastewater collection, treatment, and disposal system.*

  Specific Plan Consistency: A Master Sewer Plan was prepared based on the sewer study entitled Preliminary Master Sewer Study. The sewer generation rate for SUMMERWIND RANCH AT OAK VALLEY is based on the number of residential units and acreage factors for all other types of development. All sewer facilities were sized using YVWD's peak demand.

- **Goal IPS-3:** *Ensure that adequate flood control facilities are provided prior to or concurrent with development.*

  Specific Plan Consistency: The proposed project site does not contain a mapped 100-year floodplain or dam inundation area. Additionally, the grading design will strive to minimize grading within the major streambed areas. All storm drain facilities will be designed in accordance with Riverside County Flood Control District (RCFC&WCD) guidelines and standards, and to accommodate 100-year storm flows. Where needed, channel protection measures will be constructed in open areas to protect from excessive erosion.

- **Goal IPS-4:** *Ensure adequate service from utility purveyors of natural gas, electricity, and communication services.*

  Specific Plan Consistency: Utilities and infrastructure necessary to serve the proposed community such as natural gas, electricity and communication cable will be adequate and available based on demand analyses.

- **Goal IPS-5:** *Plan and provide adequate infrastructure for all new development, including but not limited to, integrated infrastructure planning, financing, and implementation.*

  Specific Plan Consistency: Public utilities and infrastructure necessary to serve the proposed community will be sufficient and conveniently located and phased in conjunction with development of the property. Financing and implementation measures will be available.

- **Goal IPS-6:** *Plan for the convenient location and adequate size of public facilities.*

  Specific Plan Consistency: The adequate size of public utilities and infrastructure necessary to serve the proposed community will be sufficient and conveniently located and phased in conjunction with development of the property.

- **Goal IPS-7:** *Maintain a level of public safety service that will ensure the safety of residents and businesses.*

  Specific Plan Consistency: Public safety services will be provided to ensure the safety of residents and businesses. An approximate 3-acre fire station is proposed in a location on Roberts Road that will provide efficient emergency response times.

- **Goal IPS-8:** *Maintain a Capital Improvement Plan and impact fee program that will provide the necessary services and facilities to meet the needs of the city and communication services.*

  Specific Plan Consistency: Financing and implementation measures will be available. A community facilities district will be established as a means to obtain additional funding for public improvements. In addition, required impact fees will be paid for public improvements. Commercial and business park uses will provide a substantial amount of assessments, capital improvements and development fees. The town center will include a city hall and fire station.

4. <u>Housing</u>

- **Goal H-1:** *Encourage the improvement, maintenance, and rehabilitation of the existing housing stock.*

  Specific Plan Consistency: This goal does not apply to this Specific Plan Amendment.

- **Goal H-2:** *Promote housing access and equal opportunity for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, or disability.*

  Specific Plan Consistency: Oak Valley Town Center will provide a place where people of all race, religion, sex, marital status, ancestry, national origin, color, or disability can work, live and play.

- **Goal H-3:** *The City will provide opportunities for the development of new housing units to meet the housing needs of all economic segments of the population while preserving the natural environment and unique existing character and physical attributes of the community.*

  Specific Plan Consistency: There are opportunities for approximately 150 residential dwelling units to be located within the town center at a rate that is affordable to individuals or families as determined by the most recent projections from the United States Census Bureau.

- **Goal H-4:** *Improve housing opportunities through private investment and, when appropriate, through public assistance.*

  Specific Plan Consistency: There are opportunities for approximately 150 residential dwelling units to be located within the town center at a rate that is affordable to individuals or families

as determined by the most recent projections from the United States Census Bureau. This could be explored through private investments with public assistance.

5. Resource Management

- **Goal RM-1:** *Conserve and protect significant landforms and hillside areas.*

  Specific Plan Consistency: The landform within the Oak Valley Town Center is generally gently sloping (less than 10-15%) without significant landforms with the exception of a drainage or arroyo that will be preserved. Other significant land areas within the specific plan area have already been preserved by the Riverside Conservation Agency and the Rivers and Lands Conservancy.

- **Goal RM-2:** *Conserve water resources and improve water quality.*

  Specific Plan Consistency: A 5-acre lake is proposed as a central feature of the town center that will be used for ground water recharge. This will help to conserve valuable groundwater resources within the aquifer below**.** Best management practices will be used including the use of water quality basins to slow erosion and provide water filtration and water quality**.**

- **Goal RM-3:** *Conserve and protect native species and habitats.*

  Specific Plan Consistency: During the preparation of the Environmental Impact Report (EIR), technical studies were completed to examine the potential impacts associated with development of Summerwind Ranch at Oak Valley including the Oak Valley Town Center area. Summaries of these reports are contained in the EIR and EIR addendum. A biological report has been completed to identify any sensitive native species or habitats that should be protected within the project site. Significant cultural resources will be preserved and/or enhanced as necessary through required mitigation plans and incorporated into planned land uses and paleontological resources will be salvaged during construction for future scientific study.

- **Goal RM-4:** *Preserve the city's historical, cultural, archaeological, paleontological, and architectural resources.*

  Specific Plan Consistency: During the preparation of the Environmental Impact Report (EIR), numerous technical studies were completed to examine the potential impacts associated with development of Summerwind Ranch at Oak Valley including the Oak Valley Town Center area. Summaries of these reports are contained in the EIR. An archeological and paleontological survey report has been completed to identify any archaeological, historical, or paleontological resources within the project site. will be preserved and/or enhanced as necessary through required mitigation plans and incorporated into planned land uses.

- **Goal RM-5:** *Protect prime agricultural lands from encroachment from urban development.*

  Specific Plan Consistency: The Specific Plan Amendment area is currently undeveloped, with a small portion of land used for farming, agricultural, and rural residential land uses. Development of the Specific Plan Amendment would result in the removal of the agricultural uses, as reviewed in the 2005 Specific Plan Amendment and Environmental Impact Report

(EIR). However, the existing, on-site agricultural productivity is extremely limited and no changes from the analysis and conclusions of the 2005 project EIR are incorporated into this Specific Plan Amendment.

6. Open Space, Parks and Recreation

- **Goal OSPR-1:** *Provide a network of open space areas that preserve natural resources and wildlife corridors to provide visual and physical relief from urban development.*

  Specific Plan Consistency: A drainage and wildlife corridor is located along a portion of the south side of Oak Valley Town Center and then traverses through the southeast area to and under the I-10 freeway. The open space corridor connects to a much larger open space area on the southwest side of Oak Valley Town Center of over 350 acres including natural open space. While much of the town center village is a relatively urban development area, this open space resource will provide visual and physical relief as well as for the movement of wildlife from east and west through this region.

- **Goal OSPR-2:** *Provide a safe, comprehensive network of interconnecting off-road trails and amenities to connect new and existing neighborhoods, parks and open space areas and areas outside the City for the purposes of maintaining and enhancing opportunities for equestrian riding, bicycle riding, walking, and hiking throughout the city.*

  Specific Plan Consistency: Off-road trails are located through the open space and wildlife corridor running along the southwest side and through Oak Valley Town Center generally in an east/west direction. A pedestrian bridge will be located over the drainage to connect the residential neighborhoods to the town center. The trail connects to a loop trail through Village A to the south and to Villages B-E to the north. It also connects to regional trails north and south of Summerwind Ranch at Oak Valley.

- **Goal OSPR-3:** *Develop active and passive park sites and multi-use trails that will serve all segments of the community based on reasonable service needs.*

  Specific Plan Consistency: Off-road trails connect from Oak Valley Town Center to all villages of Summerwind Ranch at Oak Valley. Roadway trails curb separated with a 5-foot parkway are located along Roberts Road and Singleton Road connecting to all segments of the community to the northwest, southeast and southwest. A 6-acre community park is located at the town center north entry on Roberts Road. A 5-acre lake and adjacent linear park are proposed within the commercial area southeast of Singleton Road along the north side of Roberts Road.

- **Goal OSPR-4:** *Develop and maintain facilities for the use of all community members for recreation, relaxation, and social interaction based on reasonable service needs.*

  Specific Plan Consistency: An open space and wildlife corridor with trails provide pedestrian and bicycle recreational uses to areas within Oak Valley Town Center and beyond to the entire network of parks, trails and community facilities throughout Summerwind Ranch at Oak Valley. Within Oak Valley Town Center a lifestyle commercial center concept will provide a community hub for social interaction including a 5 acre lake and linear park with trails, amphitheater for year-round community events and entertainment retail uses.

- **Goal OSPR-5:** *Provide opportunities for the joint use of public facilities for recreational purposes.*

  Specific Plan Consistency: The lifestyle commercial center at Oak Valley Town Center will provide opportunities for a regional and local community gathering hub for both residents within Summerwind Ranch at Oak Valley, residents of Calimesa and people from the surrounding region. It will provide a commercial function for the sale of goods and services but will also provide a recreational and entertainment opportunity with a joint use of public facilities including a 5-acre lake and linear park with trails.

7. Safety

- **Goal SAF-1:** *Minimize injury, loss of life, property damage, and other impacts caused by safety hazards of all types.*

  Specific Plan Consistency: The EIR for Summerwind Ranch at Oak Valley Amendment No. 1 and addendum EIR for Oak Valley Town Center Amendment No. 2 address environmental impacts and hazards including but limited to flooding, landslides, soils, geology, seismic, air quality, and fire related events. As comprehensively planned, the Oak Valley Town Center development includes appropriate setbacks from the existing and future residential areas, inclusion of expansive landscaped buffers and open spaces, and incorporation of 14-foot sound walls. The thoughtful land plan results in a design that minimizes potential injury, loss of life, property damage, and other impacts, while ensuring compatibility with nearby existing and planned residential uses, and avoids negative impacts to those areas as evidenced by the project noise study, health risk assessment, and additional safety analysis found in the project addendum.

- **Goal SAF-2:** *Reduce the potential for health and safety exposure caused by hazardous waste contamination in the city.*

  Specific Plan Consistency: If any of the proposed non-residential uses (the business park, commercial, schools, and water reclamation facility) handle, transport, or store hazardous wastes, a NPDES permit for operational activities would be required for those facilities that meet the classifications that are listed on the Regional Water Quality Control Boards Attachment 1 of the Industrial Activities Stormwater General Permit. That permit would require the business operator (permit holder) to develop an educational program for their employees that would inform them on ways to prevent illegal dumping and discharge of toxic detergents, oil and grease into the drainage system. Thus, the potential for hazardous waste contamination would be reduced. A Health Risk Assessment is required for all warehouse uses.

8. Noise

- **Goal N-1:** *Ensure that all land uses are protected from excessive and unwanted noise.*

  Specific Plan Consistency: An acoustical impact analysis has been prepared for the Specific Plan. The comprehensive development proposal, which includes berms, 14-foot sound attenuation walls, landscape buffers and setbacks incorporated into the design measures ensure that land uses are protected from excessive and unwanted noise.

- **Goal N-2:** *Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses in Calimesa.*

  Specific Plan Consistency: An acoustical impact analysis has been prepared for the Specific Plan. The comprehensive development proposal, which includes berms, 14-foot sound attenuation walls, landscape buffers, and setbacks incorporated into the design measures would prevent adverse impacts of excessive noise exposure on residents, employees, and noise-sensitive uses in Calimesa.

9. Air Quality

- **Goal AQ-1:** *Improve air quality in Calimesa.*

  Specific Plan Consistency: The existing air quality mitigation measures defined in the EIR mitigation, monitoring and reporting plan for Summerwind Ranch at Oak Valley Amendment No. 1 will be utilized to improve air quality in Calimesa. Compliance with ongoing operational standards for warehouse uses will assure improved air quality in Calimesa.

- **Goal AQ-2:** *Reduce vehicle trips and resulting emissions.*

  Specific Plan Consistency: The proposed modifications would reduce overall vehicular traffic volumes by approximately 4,464 trip-ends per day (10 percent) relative to the previously approved land uses, thereby reducing associated emissions of reactive organic gases, oxides of nitrogen, carbon monoxide, and particulate matter less than 10 microns in diameter. Air quality mitigation measures as defined in the EIR for Summerwind Ranch at Oak Valley Amendment No. 1 will be utilized to improve air quality in Calimesa.

- **Goal AQ-3***: Conserve energy, fuel, and water throughout the community.*

  Specific Plan Consistency: The proposed Specific Plan Amendment provides alternative means of travel through the community (i.e. pedestrian and bicycle). The proposed Town Center will consist of a well-integrated mix of commercial, business park, and public facility land uses. The Town Center is centrally located within the site in an effort to promote pedestrian accessibility. Together, these measures would help to minimize energy and fuel expenditures associated with transportation needs. The project also would comply with the current California Green Building Code requirements related to energy and water conservation (through, for example, providing appropriate insulation and using low-flow plumbing fixtures), and would minimize the use of potable water through development of a reclaimed water system.

- **Goal AQ-4:** *Minimize exposure of sensitive uses to air pollution.*

  Specific Plan Consistency: An air quality analysis update and Health Risk Assessment will be prepared to confirm that the proposed Specific Plan revisions would not result in exposure of nearby residences to air pollutants in excess of applicable standards.

- **Goal AQ-5:** *Reduce greenhouse gas emissions and adapt to the anticipated effects of climate change.*

Specific Plan Consistency: Oak Valley Town Center will help to reduce automobile use and greenhouse gas emissions and fuel consumption by providing jobs and daily commercial needs within close proximity to housing thereby promoting less reliance on the car and driving long distances to shop, work and recreate. The town center is centrally located with convenient access.

10. <u>Sustainability</u>

- **Goal SUS-1:** *Improve health and wellness through community design.*

  Specific Plan Consistency: The community design concept of Oak Valley Town Center promotes a healthy community concept by incorporating multiple modes of transportation including pedestrian and bicycle modes that link to various active and passive open space areas and other trails that connect to the surrounding community and region. The concept also incorporates a carefully conceived network of open space areas all of which promotes recreation, relaxation, socialization and wellness opportunities.

- **Goal SUS-2:** *Expand business growth and job opportunities.*

  Specific Plan Consistency: Oak Valley Town Center will provide a central community hub for commercial and business development in close proximity to surrounding residential communities. A variety of businesses and job types are anticipated in fields such as retail, entertainment, restaurant, office, light industrial, warehouse, and civic uses.

- **Goal SUS-3:** *Support infill multi-family and commercial development with adequate public facilities.*

  Specific Plan Consistency: This goal does not pertain to this project since it is not an infill site.

- **Goal SUS-4:** *Improve downtown public infrastructure, transportation routes, and recreation uses.*

  Specific Plan Consistency: The development of Oak Valley Town Center will require the construction of the interchange at the Singleton Road and the I-10 freeway thereby improving public infrastructure and transportation routes.

- **Goal SUS-5:** *Reduce automobile use and fuel consumption.*

  Specific Plan Consistency: Oak Valley Town Center will help to reduce automobile use and fuel consumption by providing jobs and daily commercial needs within close proximity to housing thereby promoting less reliance on the car and driving long distances to shop, work and recreate. The town center is centrally located with convenient access and the proposed project modifications would reduce the number of trip-ends generated by the site's uses.

- **Goal SUS-6:** *Conserve and manage water resources.*

  Specific Plan Consistency: A 5-acre lake is proposed as a central feature of the town center that will be used for ground water recharge. This will help to conserve valuable groundwater

resources within the aquifer below**.** Best management practices will be used to slow water runoff down so that water can percolate near its source and into the local groundwater supply.

- **Goal SUS-7:** *Reduce energy use and improve energy efficiency.*

  Specific Plan Consistency: Energy conservation and use mitigation measures as defined in the EIR for Summerwind Ranch at Oak Valley Amendment No. 1 will be utilized where possible to reduce energy use and improve energy efficiency. The project also would comply with the latest California Green Code requirements, which are designed to improve energy efficiency.

- **Goal SUS-8:** *Support commercial development that serves local and regional needs.*

  Specific Plan Consistency: Commercial development that serves local and regional needs are proposed in Oak Valley Town Center Amendment No. 2. Business Park office, light industrial or warehouse uses will help to provide regional needs with uses such as distribution centers that have close access to a the I-10 freeway, a major transportation corridor. Big and medium box commercial as well as smaller retail, restaurant and entertainment retail uses will serve local and community needs. A mix of these uses in the town center will provide opportunities for both local and regional needs as well as employment opportunities.

The modifications would not result in new significant environmental impacts related to land use and planning and impacts would remain less than significant.

Changes in Circumstances/New Information

In the time since the EIR was certified in 2005, portions of the Summerwind Ranch Specific Plan (outside of the Project site) have been developed, and development has continued in the surrounding area. Such development was, however, anticipated in the EIR and the City's General Plan. The City's General Plan was updated in 2014, but the updates did not include modifications to the area addressed by the Summerwind Ranch Specific Plan. Subsequent to the 2014 General Plan update, the City adopted CDC amendments (through adoption of Ordinance 343 in 2016) that limited warehouses to 250,000 SF, revised setback requirements for warehouse uses, and imposed a requirement for a City Council-approved CUP for warehouse uses. The Project would modify the size and setback requirements as they apply to SP-1, A2. The Specific Plan's analysis of consistency with the General Plan addresses the City's current General Plan policies. There have been no substantial changes in land use and planning policies or requirements within the area of the proposed modifications since the time of the certification of the EIR that would increase the severity of land use and planning impacts. Additionally, no new information of substantial importance regarding land use has become available. Therefore, no changes in circumstances and no new information of substantial importance relative to land use have been identified.

Conclusion

None of the proposed modifications involve new significant impacts or a substantial increase in previously identified impacts related to land use and planning. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding land use and planning which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided

pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Noise

Summary of Previous Analysis

Analysis of noise impacts is contained in the EIR, Section 3.8, pages 3.8-1 through 3.8-20. The EIR concluded that potentially significant noise impacts would occur related to construction noise. The EIR requires implementation of MM N1-1 through N1-4.

MM N1-1 During all project site excavation and grading, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

MM N1-2 The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction related noise sources and noise sensitive receptors nearest the project site during all project construction.

MM N1-3 The construction contractor shall limit all construction related activities that would result in high noise levels according to the construction hours to be determined by City staff.

MM N1-4 The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.

These measures require the construction contractor to equip all construction equipment with properly operating and maintained mufflers; place all stationary equipment so that emitted noise is directed away from noise-sensitive receptors; locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors; limit all construction-related activities that would result in high noise levels according to the construction hours determined by City staff; limit haul truck deliveries to the same hours specified for construction equipment; and designate haul routes that avoid passing by sensitive land uses or residences to the extent feasible. The EIR concluded that upon implementation of these mitigation measures, impacts would be less than significant.

The EIR concluded that operational noise impacts would be less than significant, in part due to the construction of minimum six-foot high sound attenuation walls between residential uses and major roadways, which was incorporated as a design feature in the Specific Plan. It was determined that with sufficient building insulation, multi-family residential buildings facing I-10 would meet the City's interior noise level standards for residential development.

Analysis of the Proposed Modifications

A supplementary noise analysis has been prepared to address the proposed modifications (HELIX 2020b; Attachment C). The proposed modifications would not result in additional noise impacts during construction. Construction of the Project, with the proposed modifications, would involve the same

general construction activities and equipment in the same general locations as what was assumed in the EIR; therefore, construction noise would be similar to what was evaluated in the certified EIR. The Project proponent would implement MM N1-1 through N1-4 to reduce noise levels, and impacts would remain less than significant.

The change in land uses from would result in changes to daily traffic volumes along roadway segments, as detailed in Table 4, *Comparison of Average Daily Traffic Volumes*.

Table 4
COMPARISON OF AVERAGE DAILY TRAFFIC VOLUMES

Road Name/Segment	Average Daily Traffic (in thousands)		
	General Plan Buildout with Specific Plan	General Plan Buildout with Project	Difference
Roberts Road			
South of "C" Street	34.0	29.8	-4.2
South of Singleton Road	27.0	30.5	+3.5
North of Cherry Valley Boulevard	37.0	35.4	-1.6
Singleton Road			
West of Roberts Road	29.0	25.1	-3.9
East of Calimesa Boulevard	38.0	37.9	-0.1

Source: Urban Crossroads 2020

Note: The average daily traffic volumes for the General Plan buildout with Specific Plan scenario are presented as actual vehicles, while the average daily traffic volumes for the General Plan buildout with Project scenario are presented as passenger car equivalent (PCE); therefore, the average daily traffic volumes presented for the General Plan buildout with Project scenario are higher than what would actually occur and the difference between the two scenarios is conservative.

The proposed modifications would result in an increase in traffic along the segment of Roberts Road south of Singleton Road during operations; however, there are no noise-sensitive residential land uses proposed along this segment, and the minimal increase in traffic compared to the build-out traffic volume along this segment that was analyzed in the certified EIR would not cause an exceedance of noise standards at commercial and business park land uses.

All roadway segments except for the segment of Roberts Road south of Singleton Road would have decreased average daily traffic volumes with the proposed Project when compared to the Summerwind Ranch project, and are therefore anticipated to have decreased traffic noise levels. This is because for a given mix of vehicles, roadway traffic noise is directly proportional to roadway traffic volume. In other words, for two scenarios consisting of similar vehicle mixes, the one with lower traffic volumes will have lower traffic noise levels.

Although the proposed Project would include warehouse distribution centers and would generate more truck traffic than the Summerwind Ranch project, the four roadways included in Table 4 that would experience a decrease in traffic volumes with the proposed Project are anticipated to accommodate a vehicle mix under the proposed Project similar to that under the Summerwind Ranch project. This is because the trucks associated with the warehouse distribution centers in Planning Areas TC-1, TC-2, and TC-3 would primarily utilize the I-10 freeway for regional distribution. As such, it is anticipated that the vehicle mix along these four segments would be similar to that which was analyzed in the EIR. With similar vehicle mixes and decreased traffic volumes, because roadway traffic noise is directly

proportional to roadway traffic volume, it can therefore be concluded that traffic noise levels along these four segments would be lower than what was analyzed in the EIR, and no new impacts would occur.

Although not addressed in the EIR, the supplementary noise analysis addresses potential impacts from business park uses to nearby residential and open space uses, due to the proposed reduction in minimum setback distances. The specific warehouse setback provisions that are proposed to be altered through this Project were not in place when the Summerwind Ranch Specific Plan was adopted in 2005. Rather, those provisions were approved separately by the City in 2016, through adoption of Ordinance 343.

In the noise model, receivers were placed at first- and second-story building heights at the residential properties within the E-2 Townhomes to the north of TC-1, the B-2 Garden Courts to the north of TC-2, and the B-3 Bungalows to the west TC-2, and at various locations along the TC-3 property line adjacent to the proposed TC-10 Open Space and near the A-8 Cottages to the south. The A-8 Cottages are the only existing residential use adjacent to the site, with some units located within approximately 250 horizontal feet of proposed TC-3, at elevations approximately 30 feet above the proposed industrial uses. Noise is generally attenuated by approximately 6 dB with each doubling of distance. Due to the distance, noise levels at the homes, even in the absence of the proposed barriers, would be approximately 40 to 45 dBA L_{EQ}, which is within the established thresholds. With design measures included in the Specific Plan, including barriers at the interface between proposed industrial uses and residential or open space uses as illustrated on Figure 5, operational noise levels associated with the proposed modifications would not exceed applicable standards at off-site noise-sensitive residential and open space land uses.

Planning Area TC-1A is planned for commercial use, but currently contains a non-conforming residential use, elevated up to 15 feet above the planned TC-1 Business Park use. The top of slope is on the property line. Given that this property is planned for commercial use, both the use and the relative elevations are anticipated to vary from their current condition in the future. Due to the transitional nature of land use in this planning area adjacent to TC-1, potential noise impacts to this location will be addressed as part of the Development Plan Review and a City Council-approved CUP for warehouses pursuant to CMC Section 18.30 for the TC-1 Business Park, based on the land use and associated topography in the TC-1A Planning Area that are existing and planned at the time of that review. Due to the potential for noise impacts, an additional noise analysis will be required and its recommendations would be incorporated into project design (including setback requirements) as part of the Development Plan Review and a City Council-approved CUP for warehouses pursuant to Calimesa Municipal Code (CMC) Section 18.30.

Although the locations of the business park and commercial land uses adjacent to I-10 would be revised, both land uses would remain within the same general proximity to I-10 and would therefore be exposed to similar noise levels as those analyzed in the certified EIR. Implementation of the EIR mitigation measures would reduce potential construction noise impacts below a level of significance, and operational noise impacts would remain less than significant.

Changes in Circumstances/New Information

The City has adopted limitations on the use of construction equipment Monday through Friday from 7:00 AM to 7:00 PM, and weekends, 10:00 AM to 5:00 PM (CMC Health & Safety Code, Section 8.15.080

Construction Equipment). This updated provision would affect the implementation of MM N1-3, but that modification would further assure that noise impacts are consistent with, or less than, the impacts that were analyzed in the 2005 EIR. There have been no other substantial changes in noise or vibration policies or requirements within the area of the proposed modifications since the time of the adoption of the EIR. Modeling of operational noise levels takes future conditions into account. Additionally, no new information of substantial importance regarding noise or vibration has become available. Therefore, no changes in circumstances and no new information of substantial importance relative to noise or vibration have been identified.

Conclusion

None of the proposed modifications involve new significant impacts or a substantial increase in previously identified impacts related to noise and vibration. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding noise and vibration which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Public Services

Summary of Previous Analysis

Analysis of public services impacts is contained in the EIR, Section 3.9, pages 3.9-1 through 3.9-12. The EIR concluded that an increase in demand for fire protection services, police protection services, schools, and library services would occur. The EIR requires implementation of MM PS1-1 through PS1-5, PS2, PS3-1, PS3-2, and PS5.

MM PS1-1 Developer impact fees shall be paid to contribute to the cost of new fire facilities, and equipment to offset the increase in fire services demand.

MM PS1-2 The City shall coordinate with the Fire District to evaluate potential new station sites within the area of the proposed project to provide adequate response times for emergency services.

MM PS1-3 Prior to construction, the developer shall contact the Fire District for verification of current fire protection development requirements. All new construction shall comply with all applicable statutes, codes, ordinances, and/or Fire District standards.

MM PS1-4 Water lines within the project site shall be designed to meet the fire requirements.

MM PS1-5 Fire hydrants shall be designed and placement specified by the Fire District at the time water lines to the project area are built or as a condition of development project approval.

MM PS2 Police impact fees shall be paid to cover capital costs associated with the creation of additional facilities and improvements to service at the Summerwind at Oak Valley project site.

MM PS3-1 Developers/builders within the plan area shall work with Beaumont Unified School District (BUSD) to plan school service for the proposed development.

MM PS3-2 Prior to issuance of building permits for each phase of development, project developers shall pay statutory developer fees to the BUSD and/or provide land and improvements pursuant to the requirements established in SB 50. The amount of fees or special taxes to be paid or land and improvements to be provided will be determined based on the established state formula for determining construction costs.

[There is no mitigation measure MM PS4.]

MM PS5 Project developers shall contribute impact fees either toward expansion of existing library facilities or construction of new facilities. The proposed development agreement for the project shall include the specific details of the agreement between the City and the developer on satisfying the requirements of this mitigation measure.

With implementation of these measures, the EIR concluded that impacts to public services would be less than significant.

Analysis of the Proposed Modifications

The proposed project modifications would not substantially alter the demand for fire or police services. The change in square footage of the proposed commercial and business park uses would not generate sufficient additional service demand such that additional public facilities beyond those previously anticipated would be required. Although the Project developer has agreed to provide a location for the fire station within the Town Center, the City Fire Department has not identified an exact location. The specific details for the location of a Fire Station within parcel TC-4 will be determined through a development agreement between the City of Calimesa and the Town Center developer. As the Project does not include residential uses, it would not generate additional population that would contribute to an impact to schools or libraries, and is not subject to MM PS3-1 regarding planning for school service. Through implementation of the other mitigation measures specified by the EIR, impacts to public services would be less than significant.

Changes in Circumstances/New Information

Subsequent to preparation of the EIR, the City formed its own Fire Department. This Department has been planned based on anticipated development in the area and, as noted above, the Project would provide a site for a new fire station, as well as contribute impact fees to fund fire apparatus and equipment. Therefore, this change in circumstances would not result in a new significant impact or increase in the severity of a previously identified significant impact. There are no other changes with respect to the circumstances under which the proposed modifications would be undertaken, and there is no new information of substantial importance that has become available relative to public services.

Conclusion

Based on the above, no new significant public service impacts or a substantial increase in previously identified impacts would occur as a result of the proposed modifications. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to

State CEQA Guidelines Sections 15162, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Transportation/Traffic

Summary of Previous Analysis

Analysis of impacts related to transportation and traffic is contained in the EIR, Section 3.10, pages 3.10-1 through 3.10-83. The EIR concluded that the project could result in significant direct and cumulative impacts to intersection level of service (LOS). The EIR requires implementation of mitigation measures that are specified for residential and Town Center development, for Phase 1 (residential only; MM T1-1 through T1-13), Phase 2 (MM T2-1 through T2-16), Phase 3 (MM T3-1 through T3-26), 2030 conditions (MM T4-1 through T4-18), General Plan build-out (MM T5-1 through T5-9), and cumulative conditions (MM T6-1 and T6-2).

MM T1-1 Traffic signals and left turn lane striping at the I-10 Freeway/Cherry Valley Boulevard Interchange ramp intersections shall be installed.

MM T1-2 Traffic signals and turn lane improvements shall be installed at the following intersections (Figure 3.10-33):

- Roberts Road at Cherry Valley Boulevard
- Realigned Desert Lawn Drive ("G" Street) at Cherry Valley Boulevard

MM T1-3 The extension of "J" Street (Cherry Valley Boulevard) shall be constructed from the I-10 Southbound Ramps to Roberts Road as an interim two-lane 32-foot pavement section.

MM T1-4 "J" Street shall be constructed from Roberts Road to the realigned Desert Lawn Drive ("G" Street) at its ultimate half-section width as an Urban Arterial roadway (134-foot ROW) adjacent to the project.

MM T1-5 "J" Street shall be constructed from the realigned Desert Lawn Drive ("G" Street) to the TAZ "G" south boundary at its ultimate full-section width as a Secondary roadway (88-foot ROW).

MM T1-6 "J" Street shall be constructed from the TAZ "G" south boundary to Champions Drive as an interim two-lane 32-foot pavement section.

MM T1-7 Champions Drive shall be constructed from its terminus to "J" Street as an interim two-lane 32-foot pavement section.

MM T1-8 The realignment of Desert Lawn Drive shall be constructed from "J" Street to the TAZ "G" east boundary at its ultimate half-section width as a Secondary roadway (88-foot ROW) adjacent to the project.

MM T1-9 The realignment of Desert Lawn Drive shall be constructed from the TAZ "G" east boundary to its existing alignment adjacent to I-10 Freeway as an interim two-lane 32-foot pavement section.

MM T1-10 "G" Street shall be constructed from "J" Street to the TAZ "A" south boundary at its ultimate full-section width as a Secondary roadway (88-foot ROW).

MM T1-11 Roberts Road shall be constructed from "J" Street to the TAZ "D" west boundary at its ultimate half-section width as an Arterial roadway (110-foot ROW) adjacent to the project.

MM T1-12 Roberts Road shall be constructed from the TAZ "D" west boundary to the TAZ "H" south boundary as an interim two-lane 32-foot pavement section.

MM T1-13 Roberts Road shall be constructed from the TAZ "H" south boundary to the existing Roberts Road/Woodhouse Road alignment as an interim two-lane 32-foot pavement section adjacent to the project.

MM T2-1 The Developer shall participate in the installation of a traffic signal and turn lane improvements at the intersection of Calimesa Boulevard and Singleton Road.

MM T2-2 A traffic signal and turn lane improvements shall be installed at the intersection of Roberts Road/Woodhouse Road and Singleton Road.

MM T2-3 The extension of Singleton Road from Roberts Road/Woodhouse Road to the TAZ "T" west boundary shall be constructed as an interim two-lane 32-foot pavement section.

MM T2-4 Singleton Road from the TAZ "T" west boundary to TAZ "N" Access Driveway shall be constructed at its ultimate half-section width as a Secondary roadway (88-foot ROW).

MM T2-5 "A" Street from Singleton Road to the TAZ "O" north boundary shall be constructed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T2-6 "A" Street from the TAZ "O" north boundary to "B" Street shall be constructed at its ultimate half-section width as a Divided Collector roadway (78-foot ROW).

MM T2-7 "B" Street from the TAZ "M" north boundary to "A" Street shall be constructed at its ultimate half-section width as a Divided Collector roadway (78-foot ROW).

MM T2-8 "B" Street from "A" Street to the TAZ "M" west boundary shall be constructed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T2-9 "B" Street west of the TAZ "M" west boundary along the TAZ "N" north boundary shall be constructed at its ultimate half-section width as a Divided Collector roadway (78-foot ROW).

MM T2-10 The Developer shall participate in the I-10 Freeway/Cherry Valley Boulevard Interchange improvement project.

MM T2-11 The Developer shall participate in the installation of a traffic signal and turn lane improvements at the intersection of Calimesa Boulevard and Singleton Road.

MM T2-12 Turn lane improvements shall be provided at the intersection of Roberts Road and "J" Street (Cherry Valley Boulevard).

MM T2-13 "J" Street shall be widened from the I-10 Southbound ramps to Roberts Road at its ultimate half-section width as an Urban Arterial roadway (134-foot ROW).

MM T2-14 Roberts Road from "J" Street to the TAZ "D" west boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T2-15 Roberts Road shall be widened from the TAZ "D" west boundary to the TAZ "C" north boundary at its ultimate half-section width as an Arterial roadway (110-foot ROW).

MM T2-16 Singleton Road from Roberts Road/Woodhouse Road to the TAZ "T" west boundary shall be constructed at its ultimate half-section width as an Arterial roadway (110-foot ROW).

MM T3-1 The Developer shall participate in the I-10 Freeway/Singleton Road Interchange improvement project.

MM T3-2 The Developer shall participate in providing turn lane improvements at the I-10 Freeway/ Cherry Valley Boulevard Interchange.

MM T3-3 Traffic signals and turn lane improvements shall be installed at the following intersections:

- "C" Street at Singleton Road
- "A" Street at Singleton Road

MM T3-4 Roberts Road from the TAZ "B" south boundary to the TAZ "C" north boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T3-5 Roberts Road shall be widened from the TAZ "C" north boundary to the TAZ "B" north boundary at its ultimate half-section width as an Arterial roadway (110-foot ROW).

MM T3-6 Singleton Road from its Phase 2 terminus (See Exhibit 1-D) to "C" Street shall be constructed at its ultimate half-section width as a Secondary roadway (88-foot ROW).

MM T3-7 Singleton Road from "C" Street to San Timoteo Canyon Road shall be constructed as an interim two-lane 32-foot pavement section.

MM T3-8 "C" Street from Singleton Road to the TAZ "I" north boundary shall be constructed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T3-9 "C" Street from the TAZ "I" north boundary to "B" Street shall be constructed at its ultimate half-section width as a Divided Collector roadway (78-foot ROW).

MM T3-10 "C" Street from "B" Street to Roberts Road shall be constructed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T3-11 Roberts Road from "C" Street to the TAZ "S" north boundary shall be constructed at its ultimate half-section width as an Arterial roadway (110-foot ROW).

MM T3-12 Complete "B" Street from "C" Street to the TAZ "I" east boundary at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T3-13 "B" Street from "A" Street to "C" Street shall be completed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T3-14 "A" Street from "B" Street to the TAZ "V" south boundary shall be completed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T3-15 The Developer shall participate in the I-10 Freeway/Singleton Road Interchange improvement project.

MM T3-16 The Developer shall participate in providing turn lane improvements at the I-10 Freeway/ Cherry Valley Boulevard Interchange.

MM T3-17 Traffic signals and turn lane improvements shall be installed at the following intersections:

- "F" Street at Singleton Road
- Roberts Road at Singleton Road

MM T3-18 Turn lane improvements shall be provided at the following intersections:

- Roberts Road at "J" Street (Cherry Valley Boulevard)
- Realigned Desert Lawn Drive ("G" Street) at "J" Street (Cherry Valley Boulevard)

MM T3-19 Turn lane improvements shall be provided at the following intersections:

- Roberts Road at "J" Street (Cherry Valley Boulevard)
- Realigned Desert Lawn Drive ("G" Street) at "J" Street (Cherry Valley Boulevard)

MM T3-20 The realigned Desert Lawn Drive from "J" Street to the TAZ "F" east boundary shall be completed at its ultimate full-section width as a Secondary roadway (88-foot ROW).

MM T3-21 Roberts Road shall be widened from the TAZ "U" south boundary to "F" Street at its ultimate half-section width as an Arterial roadway (110-foot ROW).

MM T3-22 Singleton Road shall be widened from the I-10 Southbound Ramps to Roberts Road at its ultimate half-section width as an Urban Arterial roadway (134-foot ROW).

MM T3-23 Roberts Road from Singleton Road to the TAZ "S" north boundary shall be constructed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T3-24 Singleton Road from "F" Street to the TAZ "P" west boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T3-25 "F" Street from Roberts Road to Singleton Road shall be constructed at its ultimate half-section width as a Major roadway (100-foot ROW).

MM T3-26 The realignment of Roberts Road south of Singleton Road shall be constructed as an interim 32-foot pavement section.

MM T4-1 The Developer shall participate in the northerly extension of Roberts Road from the northerly Summerwind Ranch project boundary to "D" Street (southerly Fiesta Property boundary) on a fair share basis.

MM T4-2 The Developer shall participate in providing turn lane improvements at the following locations:

- I-10 Freeway/Cherry Valley Boulevard Interchange
- I-10 Freeway/Singleton Road Interchange

MM T4-3 Traffic signals and turn lane improvements shall be installed at the following intersections:

- "C" Street at Singleton Road
- Roberts Road at "C" Street

MM T4-4 Turn lane improvements shall be provided at the following intersections:

- Singleton Road at San Timoteo Canyon Road
- Realigned Desert Lawn Drive ("G" Street) at "J" Street (Cherry Valley Boulevard)

MM T4-5 Singleton Road from the TAZ "P" west boundary to "A" Street shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T4-6 Singleton Road from "A" Street to San Timoteo Canyon Road shall be completed at its ultimate full-section width as a Secondary roadway (88-foot ROW).

MM T4-7 Roberts Road from the TAZ "S" north boundary to the TAZ "K" north boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T4-8 "C" Street from the TAZ "I" north boundary to "B" Street shall be completed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T4-9 San Timoteo Canyon Road from the TAZ "I" north boundary to Singleton Road shall be completed at its ultimate full-section width as a Divided Collector roadway (78-foot ROW).

MM T4-10 The Developer shall participate in the completion of San Timoteo Canyon Road from the TAZ "6b" north boundary to Singleton Road at its ultimate full-section width as a Secondary Frontage roadway (76-foot ROW).

MM T4-11 The Developer shall participate in the northerly extension of Roberts Road from the northerly Summerwind Ranch project boundary to "D" Street (southerly Fiesta Property boundary) on a fair share basis.

MM T4-12 The Developer shall participate in providing turn lane improvements at the following locations:

- I-10 Freeway/Cherry Valley Boulevard Interchange
- I-10 Freeway/Singleton Road Interchange

MM T4-13 A traffic signal and turn lane improvements shall be installed at the intersection of Roberts Road and "F" Street.

MM T4-14 Turn lane improvements shall be provided at the following intersections:

- "F" Street at Singleton Road
- Woodhouse Road at Singleton Road

MM T4-15 Singleton Road from the I-10 Southbound Ramps to Roberts Road shall be completed at its ultimate full-section width as an Urban Arterial roadway (134-foot ROW).

MM T4-16 Singleton Road from Roberts Road to "F" Street shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T4-17 Roberts Road from Singleton Road to the TAZ "R" south boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).

MM T4-18 "F" Street from Singleton Road to Roberts Road shall be completed at its ultimate full-section width as a Major roadway (100-foot ROW).

MM T5-1 "J" Street shall be increased between Roberts Road and "G" Street, from the Enhanced Secondary (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Urban Arterial roadway (134-foot ROW).

MM T5-2 San Timoteo Canyon Road shall be decreased west of Singleton Road, from the Arterial (114-foot ROW) designation in the Oak Valley Specific Plan to the recommended Divided Collector roadway (78-foot ROW).

MM T5-3 San Timoteo Canyon Road shall be decreased between Singleton Road and "J" Street, from the Major Frontage roadway (90-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary Frontage roadway (76-foot ROW).

MM T5-4 Singleton Road shall be decreased between San Timoteo Canyon Road and "A" Street, from the Arterial roadway (114-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).

MM T5-5 "G" Street shall be decreased between San Timoteo Canyon Road and the TAZ "7b" north boundary, from the Secondary roadway (88-foot ROW) designation in the Oak Valley Specific Plan to the recommended Divided Collector roadway (78-foot ROW).

MM T5-6 "F" Street shall be decreased between Singleton Road and Roberts Road, from the Arterial roadway (114-foot ROW) designation in the Oak Valley Specific Plan to the recommended Major roadway (100-foot ROW).

MM T5-7 Roberts Road shall be decreased between Singleton Road and "J" Street, from the Urban Arterial roadway (134-foot ROW) designation in the Oak Valley Specific Plan to the recommended Arterial roadway (110-foot ROW).

MM T5-8 "J" Street shall be decreased between "G" Street and Champions Drive, from the Enhanced Secondary roadway (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).

MM T5-9 The realigned Desert Lawn Drive shall be decreased between "J" Street and the I-10 Freeway, from the Enhanced Secondary roadway (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).

MM T6-1 Cumulative impacts from traffic growth can be mitigated by implementing the traffic improvements designated herein on a fair-share basis.

MM T6-2 A traffic study shall be prepared at the initiation of each new phase of the Summerwind Ranch Specific Plan, or other frequency specified by the City Engineer, as a means of monitoring traffic conditions in the study area. The study will be used to determine the effectiveness of constructed improvements, the nature of traffic growth, and whether phased improvements are sufficient. Recommendations for timing of proposed mitigation measures or new measures will be made.

In summary, these measures include specific requirements related to physical traffic improvements (e.g., traffic signals, turn lane improvements, roadway construction, roadway widening), fair share contribution to costs, and monitoring of traffic growth in the area. Specifically, MM T6-2 requires that a traffic study be prepared at the initiation of each new phase of development to determine the effectiveness of constructed improvements, the nature of traffic growth, and whether phased improvements are sufficient, as well as make recommendations for timing of proposed mitigation measures or new measures. With implementation of these requirements, the EIR determined that impacts to transportation and traffic would be less than significant.

Analysis of the Proposed Modifications

As required by MM T6-2, a traffic analysis (Urban Crossroads 2020a; Attachment D) has been addressed to evaluate current traffic conditions and the proposed project modifications, to identify significant impacts and provide updated recommendations regarding necessary transportation improvements. For the purposes of conservative modeling of potential traffic impacts, the business park uses were assumed to include 1,020,800 SF of high-cube parcel hub warehouse and 1,229,200 SF of high-cube cold storage warehouse. The analysis of trip generation addresses both actual vehicle trips as well as trips adjusted with passenger car equivalent (PCE) factors, which account for the larger size and inferior performance characteristics of large trucks relative to passenger cars.

Table 5, *Trip Generation Comparison*, provides a comparison of the trip generation from the previously approved plan to the proposed plan. In summary, the proposed modifications would result in the

following differences for trip generation within the Project area, relative to the previously approved plan:

- 8,052 fewer trip-ends per day
- 1,116 fewer inbound a.m. peak hour trips
- 242 more outbound a.m. peak hour trips
- 290 more inbound p.m. peak hour trips
- 1,022 fewer outbound p.m. peak hour trips

Table 5
TRIP GENERATION COMPARISON

Trip Generation		Previously Approved Plan	Proposed Plan		Difference (Proposed PCE – Previously Approved)
			Actual Trips	PCE	
Actual Trips	AM Peak Hour				
	Inbound	2,194	863	1,078	-1,116
	Outbound	568	625	810	+242
	Total	2,762	1,488	1,888	-874
	PM Peak Hour				
	Inbound	1,595	1,721	1,885	+290
	Outbound	2,782	1,660	1,760	-1,022
	Total	4,377	3,381	3,645	-732
	Daily	44,425	32,873	36,373	-8,052

PCE = Passenger Car Equivalent

The Project would omit previously planned Street "F," which would have been a Major roadway. The Project's westerly realignment of Roberts Road, however, would negate the need for this parallel roadway segment. The proposed modified alignment of Roberts Road would provide appropriate capacity and connectivity in the Project area, south of Singleton Road and west of the I-10 freeway, without an added parallel facility.

Based on the revised Project traffic volumes and network features, the updated traffic report identified additional modifications that could occur to the previously planned travel lane configurations, as follows:

- At the I-10 Eastbound Ramps/Singleton Road intersection, the 2005 analysis recommended an eastbound channelized free right-turn lane. With Project volume changes, an eastbound conventional right-turn lane would suffice.

- At the Calimesa Boulevard/Singleton Road intersection, the 2005 analysis recommended three eastbound through travel lanes in addition to an eastbound right-turn lane. With Project volume changes, two eastbound through travel lanes (in addition to the eastbound right-turn lane) would suffice on the eastbound approach to the intersection.

- At the Roberts Road/Singleton Road intersection, the 2005 analysis recommended a northbound channelized free right-turn lane. With Project volume changes, a northbound conventional right turn lane with overlap signal phasing would suffice.

- At the TC-4 Access/Singleton Road intersection, the 2005 analysis included a north leg to the intersection, as well as a single westbound left-turn lane. With Project volume changes and site access as presented in the current plan, the north leg of this intersection would be eliminated, and dual westbound left-turn lanes are recommended.

With these modified lane configurations, all evaluated intersections would continue to experience acceptable operations (LOS C or better), consistent with the conclusions of the 2005 analysis. Therefore, the required traffic mitigation measures would be modified to reflect these updated lane configuration requirements.

The Project would be required to make financial contributions toward additional traffic improvements (including the future I-10/Singleton Road interchange), including the County of Riverside Transportation Uniform Mitigation Fee Program and City Development Impact Fee Program.

A separate Traffic Phasing Evaluation (Urban Crossroads 2020b; Attachment E) was prepared to evaluate proposed phasing of the Project and identify associated transportation improvement requirements. The updated information regarding timing of transportation improvements has been incorporated into the Project MMRP.

In summary, the evaluation of the proposed modifications (i.e., revised circulation system and land uses) indicates that they would not result in new significant transportation impacts or an increase in the severity of previously identified significant impacts. The Project would implement the required street improvements consistent with the updated traffic studies, as required by MM TR6-2. Through implementation of street improvements in compliance with MM TR6-2, impacts to transportation and traffic would remain less than significant.

Changes in Circumstances/New Information

The updated traffic analysis included a review of the existing and planned circulation network, as well as long-range future volumes and peak hour intersection operations. As indicated above, the traffic analysis conducted with this updated information as well as updated Project characteristics indicated that changes in circumstances under which the proposed modifications are undertaken would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts.

California Senate Bill (SB 743) resulted in replacement of the level of service (LOS) metric previously used for transportation impact analysis with a new metric, known as vehicle miles traveled (VMT), effective July 1, 2020. Reflecting this requirement, the City adopted VMT thresholds of significance on June 15, 2020 pursuant to Resolution No. 2020-22. In the SB 743 Frequently Asked Questions portion of its website, the Governor's Office of Planning and Research (OPR), which is responsible for drafting CEQA Guidelines states, "[i]n reviewing the applicability of these conditions, an agency may use its discretion to determine that a VMT analysis is not required for later-prepared documents. (See, e.g., CREED v. San Diego (2011) 196 Cal.App.4th 515; Concerned Dublin Citizens v. City of Dublin (2013) 214 Cal.App.4th 1301, 1320.)" The exercise of discretion is subject to the analysis required under Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163. The referenced cases address situations analogous to the recent change to the traffic analysis guidelines, as they address the addition of impacts related to GHG emissions to the State CEQA Guidelines in the interim period between certification of an EIR and subsequent environmental review of a project. In both cases, the courts determined that the addition of GHG impacts to the CEQA Guidelines did not constitute "new

information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the EIR was adopted."

CEQA Guidelines Section 15064.3 defines VMT as "the amount and distance of automobile travel attributable to a project." This type of information was available at the time the Summerwind Ranch EIR was certified. It is a metric that has long been the subject of research regarding transportation patterns and their associated effects. Frequently Asked Questions Regarding the Proposed Updates to the CEQA Guidelines issued by OPR in 2017 stated, "Vehicle miles traveled is already used in CEQA to study other potential impacts such as greenhouse gas, air quality, and energy impacts and is used in planning for regional sustainable communities strategies. Therefore, the proposal is not adding a new CEQA requirement; instead, it suggests replacing level of service with a metric that is already widely used in CEQA."

More specifically, the Air Quality Impact Analysis for Summerwind Ranch (circulated as Appendix B of the EIR) included modeling that specifically considered both the number and anticipated distance of vehicle trips. Based upon the information provided in the EIR, VMT could have been extrapolated. Thus, while VMT represents an updated metric for the analysis of transportation impacts under CEQA, and the specific methods for its measurement and evaluation have been updated and become more sophisticated, it is not a new concept.

Furthermore, analysis of VMT for the previously approved land uses and the revised land uses reveals that the proposed project modifications would result in a decrease in VMT. This analysis was conducted based on the types of information (trip generation rates and trip length estimates) available at the time of preparation of the EIR, for consistency.

As noted above, the first element of the calculation of VMT is the amount of vehicle travel, or number of trips, generated by a project. The number of trips generated for the Summerwind Ranch and Oak Valley Town Center projects is based on the trip generation summary contained in the Trip Generation and Circulation Context for Oak Valley Town Center (Urban Crossroads 2020). That report specifies the number of passenger car and truck trips for the Oak Valley Town Center, but does not provide corresponding detail for the Summerwind Ranch project. Therefore, the breakdown of passenger cars versus truck trips associated with business park uses for the Summerwind Ranch project was determined based on the Summerwind Ranch Air Quality Impact Analysis (Urban Crossroads 2004).

The second element of the calculation of VMT is the distance that would be covered by each trip. Because the types of uses allowed in each land use category under the Summerwind Ranch or Oak Valley Town Center would be the same, the same trip lengths were used for both scenarios. Specifically, a trip length of 5.941879 miles was used for retail, a trip length of 12 miles was used for business park cars, and a trip length of 40 miles was used for business park trucks. The trip length for retail uses is based on default values from the California Emission Estimator Model (CalEEMod), Version 2016.3.2. The trip length for business park uses reflects recent, conservative requirements for modeling of warehouse uses based on guidance from the South Coast Air Quality Management District.

The resulting calculations of VMT based on the above-described trip generation rates and trip lengths are provided in Table 6, *Vehicle Miles Traveled Comparison*.

Table 6
VEHICLE MILES TRAVELED COMPARISON

	Summerwind Ranch			**Oak Valley Town Center**		
Land Use	Retail	Business Park		Retail	Business Park	
Vehicle Type	Cars	Cars	Trucks	Cars	Cars	Trucks
Trips	31,515	17,810	1,403	28,380	4,970	2,361
Trip Length (miles)	5.941879	12	40	5.941879	12	40
VMT	187,258	213,725	56,102	168,631	59,640	94,440
Total VMT	**457,086**			**322,711**		
VMT Difference	**134,375 (29%) Reduction**					

Based on the inputs described above, the Summerwind Ranch land uses that were proposed on the Oak Valley Town Center site would result in 457,086 total VMT, while the proposed Oak Valley Town Center land uses would result in 322,711 total VMT, for a decrease of 134,375 VMT, or approximately 29 percent.

Information regarding VMT clearly could have been known with reasonable diligence at the time the EIR was certified. Therefore, it does not comprise "new information of substantial importance" under CEQA. Additionally, no other new information of substantial importance regarding transportation and traffic has become available. Therefore, no changes in circumstances and no new information of substantial importance that would result in increased impacts relative to transportation and traffic have been identified.

Conclusion

None of the proposed modifications involve new significant impacts or a substantial increase in previously identified impacts related to transportation and traffic. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding transportation and traffic which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Utilities and Service Systems

Summary of Previous Analysis

Analysis of utilities and service systems impacts is contained in the EIR, Section 3.11, pages 3.11-1 through 3.11-11. The EIR determined that the project could result in impacts related to wastewater infrastructure and treatment, water supply and infrastructure, and storm water drainage. The EIR requires implementation of MM UT1-1 through UT1-4, MM UT2-1 through UT2-6, and MM UT-3 to mitigate these impacts.

MM UT1-1 The applicant shall be responsible for payment of all wastewater related development impact fees and related charges, as determined by the water supply assessment at the time a building permit is issued for this project. Said fees include, but are not limited to, sewer treatment expansion fees and necessary permit fees.

MM UT1-2 Wastewater service will be denied if any of the terms and conditions is not satisfied.

MM UT1-3 The Applicant shall be responsible for complying with the Regional Water Quality Control Board (RWQCB) 2004 Basin Plan and Maximum Benefit demonstration as adopted by the Regional Board.

MM UT1-4 This project will be required to construct and/or participate in the Oak Valley Regional Water Reclamation Facility. This facility is a wastewater treatment plant that will utilize a membrane bioreactor and denitrification facilities to both comply with the RWQCB 2004 Basin Plan and provide a high quality recycled water source for a significant portion of the irrigation uses within the development.

MM UT2-1 Adequate source water is available for domestic water supplies and recycled water supplies for both potable use and fire protection. The applicant shall be responsible for the construction or supplemental production, transmission and storage facilities to serve the project in accordance with the water supply assessment. These facilities include, but are not limited to, the construction and/or participation in the construction of reservoirs in Pressure Zones 10, 11 and 12.

MM UT2-2 The applicant shall be responsible for all costs associated with the preparation, recommendations and decisions resulting from the completion of a water supply assessment, if required for this project.

MM UT2-3 The applicant shall be responsible for the water related development impact fees and water related charges in effect at the time building permit is issued for this project.

MM UT2-4 The District reserves the right to deny water service to the project if any of the District's required conditions is not satisfied.

MM UT2-5 The applicant shall be responsible for installing the necessary infrastructure to achieve fire protection and minimum/maximum water pressure service standards as provided for by the District.

MM UT2-6 This project will be required to install both potable water and recycled water to each residential and commercial lot within the proposed development in order to provide sufficient water for compliance with SB 221 and SB 610. Connection to the existing recycled (non-potable) water system will be the responsibility of the applicant.

MM UT-3 An NPDES permit from the RWQCB will be required prior to the commencement of construction and post-development activities.

With implementation of these measures, the EIR concluded that impacts to utilities and service systems would be less than significant.

Analysis of the Proposed Modifications

Subsequent to preparation of the EIR in 2005, YVWD prepared comprehensive Water, Wastewater, and Recycled Water Master Plans. These plans substantially revised the planned infrastructure that had been previously identified, including eliminating the previously proposed Oak Valley Regional Water

Reclamation Facility. A Preliminary Service Evaluation for the Project has been completed by YVWD (YVWD 2020). The Project would be required to implement applicable elements of current infrastructure plans and pay associated fees, as required by YVWD. The infrastructure that would be required in accordance with the updated plans would be less than that originally envisioned and therefore would result in a reduction in the associated environmental impacts. The proposed lake in the Town Center would provide storage for reclaimed water as part of a comprehensive water management plan for the area. The Project also would comply with the latest stormwater requirements, which are more stringent than those that were in place at the time of certification of the EIR. Therefore, the proposed modifications would not result in any new significant impacts or increase in the severity of impacts identified in the EIR. The updated conditions of approval would ensure that the associated impacts would be less than significant.

Changes in Circumstances/New Information

The Water Supply Assessment/Water Verification was completed in 2005. In 2018, during review for implementation of other portions of the Summerwind Ranch Specific Plan, the City Planning Commission determined that no update to this document was required. Revisions in regard to facilities planning and stormwater management requirements are addressed above, and would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts. No other new information of substantial importance regarding utilities and service systems has become available. Therefore, no changes in circumstances and no new information of substantial importance that would result in new significant impacts or a substantial increase in the severity of previously identified significant impacts relative to utilities and service systems have been identified.

Conclusion

The proposed modifications do not involve new significant impacts related to utilities and service services. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding utilities and service systems which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

Growth Inducing Impacts

Summary of Previous Analysis

Analysis of growth-inducing impacts of the project are contained in the EIR, Chapter 6, page 6-1. The EIR acknowledges that development of Summerwind Ranch project may induce various types of growth, such as new construction of residential, commercial, and retail structures, as well as increased employment opportunities in the City and the region. It also specifically notes that the Town Center would provide an employment base for the residents of the Summerwind Ranch project, as well as the residents of the City in general. While implementation of the Specific Plan would be growth-inducing in terms of a localized employment increase, that is consistent with the City's General Plan, such as Land Use Element Goal LU-4, "Commercial and industrial development that serves the needs of Calimesa and the surrounding area, provides local job opportunities, and creates a greater job/housing balance" (Calimesa 2014). Implementation of the Specific Plan would not result in a major extension of

infrastructure outside of the Specific Plan boundaries that would induce additional growth and would be a logical extension of development that currently exists in the area.

Analysis of the Proposed Modifications

The increase in commercial and business park development could further increase localized employment opportunities, but as noted above, that is consistent with, and an important goal as outlined in the City's General Plan. The proposed modifications would not result in an unplanned extension of infrastructure and would be a logical extension of development that currently exists in the area.

Changes in Circumstances/New Information

The City has continued to grow, as was anticipated at the time of EIR certification. There are no substantial, unanticipated changes under which the Project will be undertaken, that would affect the analysis contained in the EIR. No new information of substantial importance relative to growth inducement has become available since the certification of the EIR.

Conclusion

None of the proposed modifications involve new significant impacts or a substantial increase in previously identified impacts related to growth inducement. Additionally, there are no substantial changes to the circumstances under which the proposed modifications would be undertaken, and no new information of substantial importance regarding growth inducement which was not known and could not have been known when the EIR was certified has since been identified. Therefore, the proposed modifications do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163, and an Addendum is appropriate pursuant to State CEQA Guidelines Section 15164.

6.0 DETERMINATION

Impacts associated with the proposed Project would not result in a new significant impact or substantial increase in the severity of previously identified impacts in the EIR. There are no substantial changes to the circumstances under which the Project will be undertaken, and no new information of substantial importance which was not known and could not have been known when the EIR was adopted has since been identified. Therefore, the proposed modifications associated with the Project do not meet the standards for a subsequent or supplemental EIR as provided pursuant to State CEQA Guidelines Sections 15162 and 15163. As such, this Addendum to the EIR satisfies CEQA requirements for the proposed modifications described herein pursuant to State CEQA Guidelines Section 15164.

7.0 REFERENCES

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Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment A

Mitigation Monitoring and Reporting Program

September 2020

MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

SUMMERWIND RANCH AT OAK VALLEY FINAL ENVIRONMENTAL IMPACT REPORT (SCH# 2004061035)

ADAPTED FOR OAK VALLEY TOWN CENTER

Lead Agency:

City of Calimesa
Planning Department
908 Park Avenue
P.O. Box 1190
Calimesa, California 92320

SEPTEMBER 2020

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MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Summerwind Ranch at Oak Valley
Final Environmental Impact Report
(SCH# 2004061035)
Oak Valley Town Center Addendum

INTRODUCTION

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to State of California Public Resources Code Section 21081.6, which requires adoption of a MMRP for projects in which the Lead Agency has required changes or adopted mitigation to avoid significant environmental effects. The City of Calimesa is the lead agency for the proposed Summerwind Ranch at Oak Valley project and, therefore, responsible for administering and implementing the MMRP. The decision-makers must define specific reporting and/or monitoring requirements to be enforced during project implementation prior to final approval of the proposed project. The primary purpose of the MMRP is to ensure that the mitigation measures identified in the Summerwind Ranch at Oak Valley EIR are implemented to reduce or avoid identified environmental effects. The Summerwind Ranch at Oak Valley MMRP has been adapted to clarify which requirements are applicable to the proposed Oak Valley Town Center project, which is processed as Amendment 2 to the Summerwind Ranch Specific Plan. An Addendum to the Summerwind Ranch EIR has been prepared to analyze the differences in environmental impacts resulting from the proposed Specific Plan Amendment.

The purpose of discussing the MMRP in the Final EIR and Addendum is to reiterate to the reader the mitigation responsibilities of the Lead Agency in implementing the proposed project. The mitigation measures listed in the MMRP are required by law or regulation and will be adopted by the City as the primary project approval. Certain elements of the project will be adopted or approved by other entities, as indicated in the MMRP matrix.

Mitigation is defined by the California Environmental Quality Act (CEQA) as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment
- Reduces or eliminates the impact over time by preservation and maintenance activities during the life of the project
- Compensates for the impacts by replacing or providing substitute resources or environments

Mitigation measures provided in this MMRP were initially identified in Section 3.0, Environmental Analysis of the Draft EIR, as feasible and effective in mitigating project-related environmental impacts. Several of the mitigation measures are modified as a result of the public review process. Certain measures applicable to other portions of the Summerwind Specific Plan are not applicable to the Oak Valley Town Center, and are therefore not included in this adapted, project-specific MMRP.

BASIS FOR THE MITIGATION MONITORING AND REPORTING PROGRAM

The legal basis for the development and implementation of the MMRP lies within CEQA (including the California Public Resources Code). Sections 21002 and 21002.1 of the California Public Resources Code state:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects; and

- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.

Section 21081.6 of the California Public Resources Code further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

Mitigation Monitoring Program Procedures

The MMRP for the proposed project will be in place through all phases of the project, including design, prior to construction, during construction, and during operation. City of Calimesa shall have primary responsibility for administering the MMRP activities to staff, consultants, or contractors. The City has the responsibility of ensuring that monitoring is documented through periodic reports and that deficiencies are promptly corrected. The City's designated environmental monitor will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to remedy problems. Specific responsibilities of the City include:

- Coordination of all mitigation monitoring activities

- Management of the preparation, approval, and filing of monitoring or permit compliance reports

- Maintenance of records concerning the status of all approved mitigation measures

- Assure quality control of field monitoring personnel.

- Coordinate with other agencies regarding compliance with mitigation or permit requirements.

- Review and recommend acceptance and certification of implementation documentation.

- Act as a contact for interested parties and surrounding property owners who wish to register complaints and observations of unsafe conditions and environmental violations; verify any such actions; and develop any necessary corrective actions.

RESOLUTION OF NONCOMPLIANCE COMPLAINTS

Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the Summerwind Ranch at Oak Valley project and Oak Valley Town Center project. The complaint shall be directed to the City of Calimesa in written form providing detailed information on the purported violation. The City shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, the City shall take the necessary action(s) to remedy the violation. The complaint shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

MITIGATION MONITORING AND REPORTING PLAN MATRIX

The MMRP is organized in a matrix format. The first column identifies the mitigation measure numbers. The second column summarizes the identified significant impact. The third column identifies the mitigation measures. The fourth column, entitled “Time Frame for Implementation,” refers to when monitoring will occur. The fifth column, entitled “Responsible Monitoring Agency,” refers to the agency responsible for ensuring that the mitigation measure is implemented. The sixth column, entitled “Verification of Compliance,” has sub-columns for Initials, Date, Remarks, and Method of Verification. This last column will be used by the lead agency to document the person who verified the implementation of the mitigation measure, the date on which this verification occurred, and any other notable remarks.

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MITIGATION MONITORING AND REPORTING PROGRAM MATRIX

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Aesthetics								
MM-A1	**Impact A1** The project has the potential to significantly impact the hillsides of the site. ***Less than significant with mitigation.***	All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.	Prior to approval for each implementing map within the Specific Plan	City of Calimesa Planning and Public Works Departments			SP Section VI - Hillside Management Per SP Figure VI-2, all Planning Areas have hillsides of varying slopes.	Site plan approval for implementing Tentative Tract Maps and/or Tentative Parcel Maps by the City of Calimesa.
MM-A2	**Impact A2** The project has the potential to degrade the visual quality of ridgelines and preserve open space on the site. ***Less than significant with mitigation.***	Same as MM-A1, above. All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.	Prior to approval for each implementing map within the Specific Plan	City of Calimesa Planning and Public Works Departments			Per SP Figure II-7, no ridgelines are located on the OVTC site.	Site plan approval for implementing Tentative Tract Maps and/or Tentative Parcel Maps by the City of Calimesa.
MM-A3	**Impact A3** The project has the potential to result in significant light and glare impacts. ***Less than significant with mitigation.***	Same as MM-A1, above. All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.	Prior to approval for each implementing map within the Specific Plan	City of Calimesa Planning and Public Works Departments				Site plan approval for implementing Tentative Tract Maps and/or Tentative Parcel Maps by the City of Calimesa.
MM-A4	**Impact A4** The proposed project has the potential to create cumulative aesthetic and light and glare impacts, in conjunction with other cumulative developments in the area. ***Less than significant with mitigation.***	Same as MM-A1, above. All proposed development shall comply with development standards and design guidelines (i.e., building siting, height, setbacks, architecture, landscaping, perimeter walls, fences, lighting, etc.), established in the Specific Plan document.	Prior to approval for each implementing map within the Specific Plan	City of Calimesa Planning and Public Works Departments				Site plan approval for implementing Tentative Tract Maps and/or Tentative Parcel Maps by the City of Calimesa.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Air Quality								
MM-AQ1	**Impact AQ1** Construction activity would result in significant short-term impacts on local and regional air quality due to generation of fugitive dust. ***Significant and unavoidable. Remains significant with mitigation.***	The project proponent will implement Rule 403 as applicable, which would include but not be limited to the following: ▪ Portions of the site under active construction shall be watered as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction (locations where grading is to occur will be thoroughly watered prior to earthmoving). ▪ Soils shall be watered/stabilized prior to, during, and following cut and fill activities. ▪ A minimum soil moisture content of 12% shall be maintained during earth-moving activities using the ASTM method D-2216. ▪ All trucks hauling dirt, sand, soil, or other loose materials shall be covered, or maintain at least two feet of freeboard in accordance with the requirements of Section 23114 of the California Vehicle Code (CVC). ▪ Construction access roads shall be paved at least 100 feet onto the site from main roads. ▪ Traffic speeds on all unpaved roads shall be reduced to 15 mph or less. Roads shall be watered every two hours during active construction operations, and/or a chemical stabilizer shall be applied to all unpaved surfaces.	During grading and construction for any portion of the Specific Plan	City of Calimesa Engineering Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-AQ1, MM-AQ2, MM-AQ2-2, MM-AQ2-3 and MM-AQ3. The construction site is subject to inspection by the City of Calimesa at any time during construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Air Quality (cont.)								
		▪ Disturbed areas shall be revegetated as quickly as possible consistent with approved erosion control plans. ▪ A Traffic Control Plan shall be provided for each major phase of construction by the Applicant and approved by the City Engineer addressing construction site access and egress, temporary road detours, construction traffic parking and staging, and haul routes. ▪ All streets used for construction site access or egress shall be swept once daily during active construction if visible soil materials are carried to adjacent streets.						
MM-AQ2-1	**Impact AQ2** Construction activities would result in significant short-term impacts on local and regional air quality due to generation of NO_X, ROG, and CO. ***Less than significant with mitigation.***	Construction equipment with low emission factors and high energy efficiency shall be used where possible and when available.	During grading and construction for any portion of the Specific Plan	City of Calimesa Engineering Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-AQ1, MM-AQ2, MM-AQ2-2, MM-AQ2-3 and MM-AQ3. The construction site is subject to inspection by the City of Calimesa at any time during construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Air Quality (cont.)								
MM-AQ2-2	**Impact AQ2** Construction activities would result in significant short-term impacts on local and regional air quality due to generation of NO_X, ROG, and CO. ***Less than significant with mitigation*.**	To minimize equipment emissions, engine maintenance shall be performed regularly.	During grading and construction for any portion of the Specific Plan	City of Calimesa Engineering Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-AQ1, MM-AQ2, MM-AQ2-2, MM-AQ2-3 and MM-AQ3. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-AQ2-3	**Impact AQ2** Construction activities would result in significant short-term impacts on local and regional air quality due to generation of NO_X, ROG, and CO. ***Less than significant with mitigation*.**	Alternative fuels such as ultra-low sulfur diesel for off-road construction vehicles/equipment shall be used where possible.	During grading and construction for any portion of the Specific Plan	City of Calimesa Engineering Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-AQ1, MM-AQ2, MM-AQ2-2, MM-AQ2-3 and MM-AQ3. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-AQ3	**Impact AQ3** Construction activities would potentially exceed the SCAQMD threshold for VOCs. ***Less than significant with mitigation*.**	Application of architectural coatings (i.e., paint, etc.) shall be limited to an average of no more than 225 gallons per week and/or "Zero-VOC" paint shall be used.	During construction	City of Calimesa Engineering Department			Zero-VOC paint will be used in construction of the Project's retail uses.	The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-AQ1, MM-AQ2, MM-AQ2-2, MM-AQ2-3 and MM-AQ3.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Air Quality (cont.)								
								The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-AQ4-1	**Impact AQ4** Project operation would result in significant long-term operational (vehicular) impacts on regional air quality by exceeding SCAQMD thresholds. ***Significant and unavoidable. Remains significant with mitigation.***	On-site bicycle trails linking the facility to designated bicycle commuting routes shall be provided.	Prior to approval of Tentative Parcel Maps/Plot Plans or implementing plans	City of Calimesa Planning and Public Works Departments				The Tentative Tract Maps and Tentative Parcel Maps for the Planning Areas identified in MM-AQ4-1 must show the location of the bike trails including cross sections.
MM-AQ4-2	**Impact AQ4** Project operation would result in significant long-term operational (vehicular) impacts on regional air quality by exceeding SCAQMD thresholds. ***Significant and unavoidable. Remains significant with mitigation.***	Site improvements such as street lighting, street furniture, route signs, bus turnouts, and sidewalks or pedestrian paths shall be provided.	Prior to approval for each implementing map within the Specific Plan	City of Calimesa Planning Department				Site plan approval for implementing Tentative Tract Maps and/or Tentative Parcel Maps by the City of Calimesa.
MM-AQ4-4	**Impact AQ4** Project operation would result in significant long-term operational (vehicular) impacts on regional air quality by exceeding SCAQMD thresholds. ***Significant and unavoidable. Remains significant with mitigation.***	Park and ride lots shall be provided near freeway access, as follows: ▪ Development of approximately 100 parking spaces within the commercial component of the project.	Prior to issuance of occupancy permits in the phase in which the park and ride facility is located	City of Calimesa Planning Department			Approximately 100 park and ride spaces will be provided in conjunction with future development in TC-4.	Location of Park and Ride parking lots on Tentative Tract Maps and Tentative Parcel Maps.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Air Quality (cont.)								
MM-AQ4-5	**Impact AQ4** Project operation would result in significant long-term operational (vehicular) impacts on regional air quality by exceeding SCAQMD thresholds. ***Significant and unavoidable. Remains significant with mitigation.***	According to Ride Guide provided by the RTA (Riverside Transit Agency), bus route 36 shall serve the proposed project site. The project will provide bus turnout facilities to serve this route as recommended by RTA.	Prior to issuance of occupancy permits in the Planning Area in which the facilities are located	City of Calimesa Planning Public Works Departments			Consultation with transit providers is needed regarding details of potential facilities	Determine and apply requirements through Development Plan Review/CUP process
MM-AQ9	**Impact AQ9** The proposed project would result in significant construction and operational cumulative impacts. ***Significant and unavoidable. Remains significant with mitigation.***	Cumulative impacts are reduced by implementation of mitigation measures for construction and operations. But the impacts remain significant.	Prior to issuance of occupancy permits	City of Calimesa Planning Public Works Departments				Compliance with all AQ MM in the MMRP and each specific verification method.
Biological Resources								
MM-BR2	**Impact BR2** Construction of the proposed project would directly and permanently impact approximately 20.8 acres of native oak woodland considered sensitive by the California Department of Fish and Wildlife (CDFW). The impact would include direct and permanent impacts on approximately 198 individual trees with potential impacts to an additional 38 individual trees.	Mitigation requirements to minimize permanent direct impacts to 20.8 acres of oak woodlands would involve actions prior to and during construction: ▪ Prior to issuance of grading permits, on-site preservation shall be implemented in compliance with MSHCP standards for Criteria Area Cells and implementation of an oak tree planting and restoration plan. Approximately 129.6 acres of oak woodland habitat would be preserved on site. ▪ During construction, oak trees shall be planted from container stock as well as from acorns collected on the site to ensure that the regenerated oak seedlings will have the best genetic adaptation for the Summerwind Ranch	Prior to the issuance of grading permits for each phase Prior to issuance of certificates of occupancy for each phase	City of Calimesa Planning Department CDFW – California Department of Fish and Wildlife			A limited amount of oak woodland occurs within the OVTC site. No additional on-site preservation of oak woodland is required. Oak plantings will be required in accordance with the mitigation measure, at a 4.14:1 ratio to trees impacted at the site.	Documentation verifying permanent on-site preservation of oak woodland within Criteria Cells shall be submitted to the City of Calimesa by the applicant that includes documentation that implementation occurred during construction. An Oak Tree Planting and Restoration Plan (OTPRP) will be prepared and approved by CDFW prior to issuance of grading permit(s). Documentation that the OTPRP was implemented during construction and

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Biological Resources (cont.)								
	Thus, 236 oak trees are impacted or potentially impacted by the proposed project. ***Less than significant with mitigation.***	development. The Applicant will plant 976 oak trees using a combination of 50 percent acorns and 50 percent deep one-gallon containers as mitigation for the removal of up to 236 oak trees, as shown in Table 3.3-5. The planting program reduces the impact of loss of oak woodland and oak trees to less than significant.						planting of 976 oak trees, with 50% acorns (488) and 50% (488) container-grown deep one-gallon oaks.
MM-BR3	**Impact BR3** Construction of the proposed project would directly and permanently impact approximately 0.3 acre of native riparian woodland considered sensitive by CDFW. (Of the total, approximately 0.2 acre is delineated as jurisdictional wetlands). ***Less than significant with mitigation.***	Mitigation requirements to offset permanent direct impacts to 0.3 acre of riparian woodlands would include on-site or off-site habitat creation or enhancement. Regulatory agencies will establish appropriate mitigation ratios in accordance with their policy of no net loss of riparian and wetland values.	Prior to approval of tentative tract(s) and issuance of grading permit(s): The applicant shall submit tentative tract map(s) demonstrating on-site or off-site restoration or creation of 0.3 acre of riparian woodland habitat *or* documentation that the applicant has obtained mitigation credits in a regional mitigation bank or paid in-lieu fees to off-set these impacts.	City of Calimesa Planning Department Concurrence by CDFW			OVTC would result in impacts to jurisdictional resources, requiring resource agency permits.	Applicant shall submit copies of permits and verification of permit compliance prior to impacts to jurisdictional resources.
MM-BR4	**Impact BR4** Permanent indirect impacts could occur to coastal sage scrub, oak woodland, and riparian woodland in the future if graded areas are left bare after project construction, thus encouraging exotic species introduction and invasion. ***Less than significant with mitigation.***	Mitigation recommendations for potential permanent impacts to vegetation communities will be satisfied by applying a native seed mix in the bare areas that are not subject to slope restoration after construction is complete to minimize the potential for exotic species introductions. The native seed mix shall be as specified by a qualified biologist/restoration specialist. In jurisdictional areas, seed mixes would be approved by the appropriate regulatory agency.	Prior to approval of tentative tract(s) and issuance of grading permits: The applicant shall include a restoration plan to the City that identifies the areas to be reseeded after grading. It is anticipated that the reseeding plan would be a part of any regulatory permits needed prior to grading	City of Calimesa Engineering Department CDFW/United States Army Corps of Engineers (USACE) when regulatory permits are needed.			OVTC is adjacent to open space areas with sensitive vegetation.	A qualified botanist or restoration biologist shall prepare a reseeding plan showing native seeds and submit to the City of Calimesa for each grading permit application

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Biological Resources (cont.)								
MM-BR5	**Impact BR5** Construction of the proposed project would directly and permanently impact approximately 0.2 acre of jurisdictional wetland riparian woodland habitat. ***Less than significant with mitigation.***	Mitigation requirements to offset permanent direct impacts to jurisdictional wetlands will be met by a combination of wetland creation, restoration, or enhancement. The mitigation site should be preserved at a suitable area near the impact area. Mitigation requirements for permanent impacts to jurisdictional wetlands resulting from project-related construction would be determined during the regulatory agency permit process at mitigation ratios consistent with the policy of no net loss of wetland values.	Prior to issuance of grading permit, the applicant shall submit evidence of regulatory permits and associated mitigation for jurisdictional impacts.	City of Calimesa Engineering Department Concurrence by regulatory agency as evidenced by permit issuance.			OVTC would result in impacts to jurisdictional resources, requiring resource agency permits.	Applicant shall submit copies of permits and verification of permit compliance prior to impacts to jurisdictional resources.
MM-BR7	**Impact BR7** Construction of the proposed project would directly and permanently impact approximately 2.0 acres of non- wetland waters of the U.S., also considered waters of the state. ***Less than significant with mitigation.***	Mitigation requirements for permanent direct impacts to ephemeral and intermittent drainages would require habitat creation, enhancement or restoration, and preservation at a location approved by the resource agencies through the permitting process.	Prior to the issuance of grading permits. The Applicant(s) will submit a current jurisdictional delineation to determine if there are impacts, and if so, then regulatory permit approvals shall be provided.	City of Calimesa Planning and Engineering Departments Regulatory agency as evidenced by permit issuance sign-off.			OVTC would result in impacts to jurisdictional resources, requiring resource agency permits.	Applicant shall submit copies of permits and verification of permit compliance prior to impacts to jurisdictional resources.
MM-BR8	**Impact BR8** Permanent indirect impacts could occur to jurisdictional wetlands and waters in the future if the graded areas are left bare after project construction, thus encouraging exotic species introduction and invasion. ***Less than significant with mitigation.***	Mitigation recommendations for potential permanent indirect impacts to wetland habitats will be satisfied by implementation of a Habitat Monitoring Program adequate to prevent a net loss of wetland.	Prior to grading the applicant(s) shall verify whether or not wet meadow is on the site. If wet meadow habitats are found to be impacted by development, then appropriate regulatory permits will be required.	City of Calimesa Engineering Department			No wet meadow habitat is present within the OVTC site; however, other wetland habitats are adjacent to the site.	Applicant shall submit copies of permits and verification of permit compliance prior to impacts to jurisdictional resources.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Biological Resources (cont.)								
MM-BR9-2	**Impact BR9** Construction of the proposed project would directly and permanently impact approximately 0.3 acre of suitable habitat for the least Bell's vireo and southwestern willow flycatcher, which is coincident with the riparian woodland habitat discussed above. ***Less than significant with mitigation.***	Preconstruction surveys for least Bell's vireo and southwestern willow flycatcher will be conducted prior to construction in or adjacent to habitat areas in accordance with the applicable protocol. Based on the protocol survey results, appropriate avoidance measures would be determined through consultation with regulatory agencies.	N/A	N/A			Potential habitat for least Bell's vireo is present on the OVTC site, but no suitable habitat for southwestern willow flycatcher is present.	Applicant shall submit preconstruction survey report describing habitat suitability and survey results.
MM-BR10	**Impact BR10** Permanent and temporary direct impacts to birds listed under the MBTA or BEPA would potentially occur during vegetation clearing and grading, and could occur incidentally during other project phases. These impacts are considered by the U.S. Fish and Wildlife Service and MSHCP to be a violation of these federal and regional acts. However, because significant impacts associated with project construction or operation would be an unintended or incidental occurrence, it is unlikely that this	To avoid or minimize impacts to birds covered under the Migratory Bird Treaty Act (MBTA) and/or Bald Eagle Protection Act (BEPA) the following will be implemented: ▪ Clearing and grubbing of vegetation within areas identified as habitat subject to these acts should be conducted outside the March 15 through August 15 nesting season. ▪ If clearing and grubbing must occur within habitats during the breeding season, preconstruction nest surveys shall be conducted by a qualified biologist no more than one week prior to initiation of construction. The biologist shall identify those areas where clearing and grubbing are to be avoided in order to avoid destruction of nests. ▪ In the event that least Bell's vireo or southwestern willow flycatcher is found on-site during future surveys, ensure that noise from construction activities does not	Prior to issuance of grading and during construction	City of Calimesa Planning and Engineering Departments			Preconstruction nesting bird surveys shall be conducted and recommendations for temporal or areal buffers to avoid impacts shall be adhered to. Per EIR page 3.3-8, follow up surveys are not required for Western Yellow-Billed Cuckoo. The applicant shall prepare a Worker Environmental Awareness Program (WEAP) that clearly explains all mandatory biological mitigation measures. The WEAP shall be provided to all construction personnel through oral presentations, and a printed hand out shall be provided to construction supervisors.	The applicant shall demonstrate on construction documents/plan sets that all night lighting (temporary and permanent) is positioned and directed away from conservation areas and shielded to prevent light spill into such areas. Documentation that a qualified biologist has been retained prior to construction activities. Documentation that pre-construction biological surveys have been completed and if species are found, documentation about how to relocate or avoid the birds will be completed. Pre-construction BUOW surveys will be required in

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Biological Resources (cont.)								
	would be considered a "take" under either the MBTA or BEPA. ***Less than significant with mitigation.***	exceed 60 dBA L_{EQ} within the occupied habitat of the species during the nesting season. ▪ Position, direct, and shield lights (streetlights, parking lot lighting, and other project-related illumination sources) so as to avoid "light spill" into the proposed on-site conservation areas or into habitat adjacent to the proposed project site. Night lighting used during the course of construction shall be directed away from onsite habitat conservation areas and offsite properties. ▪ Provide contractor education and erect fencing or barriers to ensure that contractors do no enter areas of open space or conserved habitat for any purpose except for enhancement projects permitted by the Specific Plan or activities that are otherwise permitted or required for implementation of EIR mitigation measures. ▪ If construction must occur within or adjacent to these habitats during the breeding season, preconstruction nest surveys shall be conducted by a qualified biologist no more than 1 week prior to construction initiation. The biologist shall identify those areas where construction is to be avoided in order to avoid destruction of nests. ▪ Preconstruction surveys shall be performed in appropriate habitat areas consistent with requirements of the MSHCP, for the western yellow-billed cuckoo and burrowing owl.						compliance with the MSCHP Burrowing Owl Surveys. Install protective barriers, if determined necessary if construction will occur with the breeding season.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Biological Resources (cont.)								
		Mitigation consistent with MSHCP requirements will be implemented if warranted by survey results.						
MM-BR12	**Impact BR12** Permanent indirect impacts to the 16 sensitive species detected on site could occur from alteration of habitat within the upland and riparian areas. ***Less than significant with mitigation.***	Mitigation measures for indirect impacts to the 16 sensitive and covered species present on-site will be met through the extensive in-kind preservation outlined in Table 3.3-4 and through compliance with other requirements of the MSHCP.	MSCHP compliance mitigates for impacts to the 16 sensitive species.	City of Calimesa Planning Department			Potential indirect impacts are addressed through preservation elsewhere within Summerwind Ranch. .	MSHCP compliance is the mitigation verification.
Cultural Resources								
MM-CR2-1	**Impact CR1** The project would impact cultural resources sites within the project area. ***Less than significant with mitigation.***	Preconstruction salvage of known exposed cultural resources shall be conducted.	Prior to issuance of grading permit. The impacted cultural sites and associated mitigation is located in Table 3.4-2 in the EIR.	City of Calimesa Engineering			Impacted Resources: LSA-SIC-337-I-3 LSA-SIC-337-S-6 (including contributing element LSA-SIC-337-I-2) LSA-SIC-337-10 Mitigation will comply with Table 3.4-2 from the EIR (also located in the Addendum).	Coordinate with consulting tribes to determine appropriate disposition of the prehistoric isolate and submit written evidence to the City of Calimesa of implementation. Report with an evaluation that includes research and oral histories for LSA-SIC-337-S-6. Updated Cultural Resources Report.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Cultural Resources (cont.)								
MM-CR2-2	**Impact CR2** The project's adverse impacts from construction and indirect impacts from increased land use and fossil collection would impact the paleontological resources within the project site. ***Less than significant with mitigation.***	Preconstruction field examination of fossil soil horizons with high potential for paleontological resources, and salvage of fossils as necessary shall be conducted.	Prior to grading, a qualified paleontologist shall survey the site to determine if the soil is suitable for fossils or other paleontological resources. If there are suitable soils, a paleontological monitor shall be on site for grading.	City of Calimesa Planning Department			If there are suitable soils for fossils, MM CR2-3 applies. Specific known fossil localities as identified in the paleo resources assessment need to be collected as well. All salvaged fossils need to be curated with an accredited museum, such as the Natural History Museum of Los Angeles County.	Preconstruction soils survey report submitted to the City of Calimesa by a qualified paleontologist.
MM-CR2-3	**Impact CR2** The project's adverse impacts from construction and indirect impacts from increased land use and fossil collection would impact the paleontological resources within the project site. ***Less than significant with mitigation.***	A project specific sampling plan that will recover standard samples of fossiliferous paleosols in stratigraphic succession within the affected areas shall be developed. The sampling program will include 12 samples from the San Timoteo Formation and three from younger sediments. These samples will be prepared by water-washing through 20 and 30 mesh screens.	If there are suitable soils for fossils found prior to construction during the site survey per MM CR2-2, a qualified paleontologist or paleontological monitor shall be on site for the grading portion of construction.	City of Calimesa Planning Department			All fossils collected from matrix screen washing shall be curated with an accredited museum, such as the Natural History Museum of Los Angeles County. This measure may be completed in conjunction with MM-CR2-2 above.	Report of findings of the pre-construction survey and salvage shall be completed by the qualified paleontologist and submitted to the City of Calimesa and the museum repository. This measure may be completed in conjunction with MM-CR2-2 above.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Cultural Resources (cont.)								
MM-CR2-4	**Impact CR2** The project's adverse impacts from construction and indirect impacts from increased land use and fossil collection would impact the paleontological resources within the project site. ***Less than significant with mitigation.***	Excavation in sediments with undetermined potential shall be monitored 50 percent of the time; and if paleontological resources are identified, monitoring shall be changed to full time. Monitors shall be empowered to temporarily redirect earthmoving equipment while fossils are examined and removed. If multiple pieces of earthmoving equipment are working simultaneously or if excavation is conducted in widely separated areas, additional monitors shall be provided as necessary.	Prior to grading, a qualified paleontologist shall survey the site to determine if the soil is suitable for fossils or other paleontological resources. If there are suitable soils, a paleontological monitor shall be on site for grading.	City of Calimesa Planning Department				The Paleontological Resources Monitoring Plan (PRMP) will need to be drafted and submitted to the City for approval before construction begins. After all ground-disturbing activities are completed the project paleontologist will need to prepare a report detailing the monitoring carried out as well as a summary of the results of monitoring. This report will be submitted to the City of Calimesa and the museum repository.
MM-CR2-5	**Impact CR2** The project's adverse impacts from construction and indirect impacts from increased land use and fossil collection would impact the paleontological resources within the project site. ***Less than significant with mitigation.***	Fossils collected during the project shall be prepared to a reasonable point of identification. The samples shall be cleaned of excess sediment or matrix and housed in an accredited museum repository. A written fossil specimen repository agreement shall be arranged in advance of excavation monitoring.	Within 60 days after completion of construction	City of Calimesa Planning Department			The LACM is the most likely repository for fossils collected from the project, as the San Bernardino Co. Museum was not accepting new material at the time of this review.	See MM-CR2-6 below for reporting requirements.
MM-CR2-6	**Impact CR2** The project's adverse impacts from construction and indirect impacts from increased land use and fossil collection would impact the paleontological resources within the project site. ***Less than significant with mitigation.***	A report documenting the results of the monitoring and salvage shall be prepared.	Within 60 days after completion of construction	City of Calimesa Planning Department				Report of the results of the monitoring program described for MM-CR2-5 above shall include reporting of all fossils salvaged from the monitoring program. This report will be submitted to the City of Calimesa and the museum repository.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Geology and Soils								
MM-GS1-1	**Impact GS1** Potential impacts related to faulting and seismicity (including liquefaction) could occur with project implementation. ***Less than significant with mitigation.***	The removal of all topsoil, partially saturated alluvium, colluvium, and highly weathered older alluvium and San Timoteo Formation shall be required under all structural fill areas from an estimated range of 1 to 40 feet.	During grading	City of Calimesa Engineering Department			Removal of top soil, to the degree necessary, shall be in compliance with the geotechnical report submitted to the City.	The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-GS1-1, MM-GS1-2, MM-GS1-3, MM-GS2-1, MM-GS2-1, and MM-GS2-2. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-GS1-2	**Impact GS1** Potential impacts related to faulting and seismicity (including liquefaction) could occur with project implementation. ***Less than significant with mitigation.***	Unsuitable soils shall be excavated and compacted using conventional grading techniques.	During grading	City of Calimesa Public Works Departments			Potential impacts related to faulting and seismicity, to the degree necessary, will be implemented through performance of the terms and recommendations of the geotechnical report.	The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-GS1-1, MM-GS1-2, MM-GS1-3, MM-GS2-1, MM-GS2-1, and MM-GS2-2. The construction site is subject to inspection by the City of Calimesa at any time during construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Geology and Soils (cont.)								
MM-GS2-1	**Impact GS2** Potential impacts related to soils and stability (i.e., seismically induced landslides) could occur with project implementation. ***Less than significant with mitigation.***	Proper grading in accordance with the State of California Special Publication 117 shall be required of all sloped terrain.	During grading	City of Calimesa Engineering Departments			Potential impacts related to soil stability, to the degree necessary, will be implemented through performance of the terms and recommendations of the geotechnical report.	The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-GS1-1, MM-GS1-2, MM-GS1-3, MM-GS2-1, MM-GS2-1, and MM-GS2-2. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-GS2-3	**Impact GS2** Potential impacts related to soils and stability (i.e., seismically induced landslides) could occur with project implementation. ***Less than significant with mitigation.***	Project mass grading and rough grading for individual development projects shall be done in conformance with a detailed Geotechnical and Soils Engineering Study. The study shall be approved by the City Engineer prior to issuance of grading permits and shall address potential hazards associated with groundshaking, secondary seismic hazards, slope stability, and public safety. Such studies shall: ▪ Conform to code requirements, standards and guidelines of the City of Calimesa; ▪ Fully and accurately reflect site conditions and hazards; and ▪ Include all mitigation measures necessary for reducing risks posed by geologic hazards on the project site.	During grading	City of Calimesa Engineering Departments			Potential impacts related to soil stability, to the degree necessary, will be implemented through performance of the terms and recommendations of the geotechnical report.	Approval of Geotechnical and Soils Engineering Study by the City of Calimesa.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Geology and Soils (cont.)								
MM-GS2-4	**Impact GS2** Potential impacts related to soils and stability (i.e., seismically induced landslides) could occur with project implementation. ***Less than significant with mitigation.***	All site grading shall be accomplished under the supervision of certified engineering geologist.	During grading	City of Calimesa Engineering Department			Potential impacts related to soil stability, to the degree necessary, will be implemented through performance of the terms and recommendations of the geotechnical report.	A report from certified engineering geologist shall be submitted and approved by the City of Calimesa during the grading portion of construction.
Hydrology and Water Quality								
MM-HW1-1	**Impact HW1** The project could potentially result in impacts to surface drainage through construction, impacts to hillsides and the introduction of impermeable surfaces. ***Less than significant with mitigation.***	Construction and development of all phases shall comply with the National Pollutant Discharge Elimination System (NPDES) regulations. Prior to the issuance of a grading permit, applicants shall demonstrate compliance with NPDES Storm water Permit requirements to the satisfaction of the City of Calimesa. Applicable BMP provisions as developed through the specific plan drainage concept and City requirements shall be incorporated into the NPDES Permit.	Prior to issuance of grading permit	City of Calimesa Engineering Departments				Copy of each implementing Tentative Parcel Map or Tentative Tract Map's Storm Water Pollution Prevention Plan prepared by a Qualified SWPPP Developer (QSD) and Receipt of the Notice of Intent from the State Water Resources Control Board shall be submitted to the City of Calimesa. Site inspection during construction with City Department of Public Works staff to meet with the Qualified SWPPP Practitioner (QSP) for the project.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Hydrology and Water Quality (cont.)								
MM-HW1-2	**Impact HW1** The project could potentially result in increased runoff and erosion due to increased impermeable surfaces. ***Less than significant with mitigation.***	Individual projects within the specific plan area shall be reviewed by the City of Calimesa for the inclusion of appropriate structural and non-structural Best Management Practices (BMPs) to control storm water discharges and protect water quality. Structural controls may include, but are not limited to filtration, common area efficient irrigation, common area runoff-minimizing landscape design, velocity dissipation devices, oil/grease separators, inlet trash racks, and catch basin stenciling. Non-structural BMPs can include education for property owners, tenants and occupants, activity restrictions, common area landscape management, litter control, and catch basin inspection, BMP maintenance; and street sweeping. The following are examples of BMPs that may be included within NPDES permit requirements for individual projects: ▪ Use of sand bags and temporary desilting basins during project grading and construction during the rainy season (October through April) to prevent discharge of sediment-laden runoff into storm water facilities. ▪ Installation of landscaping as soon as practicable after completion of grading to reduce sediment transport during storms. Or application of approved soil binders on graded building pads if they are not built upon before the onset of the rainy season.	Prior to issuance of grading permit	City of Calimesa Public Works				<u>Construction NDPES Compliance:</u> Copy of the implementing Tentative Parcel Map or Tentative Tract Map's Storm Water Pollution Prevention Plan prepared by a Qualified SWPPP Developer (QSD) and Receipt of the Notice of Intent from the State Water Resources Control Board shall be submitted to the City of Calimesa. Site inspection during construction with City Department of Public Works staff to meet with the Qualified SWPPP Practitioner (QSP) for the project. <u>Post-Construction NPDES Compliance:</u> Approval by the City of Calimesa of a Water Quality Management Plan (WQMP) prepared for the TMP or TTM. City staff site inspection of permanent BMPs at the conclusion of construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Hydrology and Water Quality (cont.)								
		▪ Incorporation of structural BMPs (e.g., grease traps, debris screens, continuous deflection separators, oil/water separators, drain inlet inserts) into the project design to provide detention and filtering of contaminants in urban runoff from the developed site prior to discharge to storm water facilities. The City shall review subsequent development projects within the specific plan area for the application of BMPs to reduce water pollution from urban runoff. The specific measures to be applied shall be determined in conjunction with review of required project hydrology and hydraulic studies, and shall conform to City standards and any Drainage Area Management Plan under the NPDES program.						
Noise								
MM-N1-1	**Impact N1** The proposed project would create a significant short-term construction noise impact. ***Less than significant with mitigation.***	During all project site excavation and grading, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.	During excavation and grading	City of Calimesa Planning Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-N1-1, MM-N1-2, MM-N1-3, AND MM-N1-4. The construction site is subject to inspection by the City of Calimesa at any time during construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Noise (cont.)								
MM-N1-2	**Impact N1** The proposed project would create a significant short-term construction noise impact. ***Less than significant with mitigation.***	The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction related noise sources and noise sensitive receptors nearest the project site during all project construction.	During construction	City of Calimesa Planning Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-N1-1, MM-N1-2, MM-N1-3, AND MM-N1-4. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-N1-3	**Impact N1** The proposed project would create a significant short-term construction noise impact. ***Less than significant with mitigation.***	The construction contractor shall limit all construction related activities that would result in high noise levels according to the construction hours to be determined by City staff.	During construction	City of Calimesa Planning Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-N1-1, MM-N1-2, MM-N1-3, AND MM-N1-4. The construction site is subject to inspection by the City of Calimesa at any time during construction.
MM-N1-4	**Impact N1** The proposed project would create a significant short-term construction noise impact. ***Less than significant with mitigation.***	The construction contractor shall limit haul truck deliveries to the same hours specified for construction equipment. To the extent feasible, haul routes shall not pass sensitive land uses or residential dwellings.	During construction	City of Calimesa Planning Department				The full MMRP will be attached to the Project Specifications in the Contract Documents. The following mitigation measures will be excerpted in full from the full MMRP and added to the City's preferred section of the Spec: MM-N1-1, MM-N1-2, MM-N1-3, AND MM-N1-4. The construction site is subject to inspection by the City of Calimesa at any time during construction.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Public Services								
MM-PS1-1	**Impact PS1** The proposed project would increase demand for fire protection services. ***Less than significant with mitigation.***	Developer impact fees shall be paid to contribute to the cost of new fire facilities, and equipment to offset the increase in fire services demand.	Prior to issuance of building permit	City of Calimesa Fire Department				Proof of Developer-paid fees based on current fee schedule to be submitted to the City of Calimesa by each developer.
MM-PS1-2	**Impact PS1** The proposed project would increase demand for fire protection services including designating a site for public facility use within the Project site. ***Less than significant with mitigation.***	The City shall coordinate with the Fire District to evaluate potential new station sites within the area of the proposed project to provide adequate response times for emergency services.	Prior to site plan approval for development within the Town Center	City of Calimesa Planning Department City of Calimesa Fire Department			Fire facility location to be determined in coordination with the City	Approval by City of Calimesa Fire Department of fire station site in the Town Center Tentative Parcel Map(s). Approval to be received in written form from City of Calimesa Fire Department via email or on City of Calimesa Fire Department letterhead.
MM-PS1-4	**Impact PS1** The proposed project would increase demand for fire protection services. ***Less than significant with mitigation.***	Water lines within the project site shall be designed to meet the fire requirements.	Prior to site plan approval	City of Calimesa Engineering Department and City of Calimesa Fire Department				Approval by City of Calimesa Fire Department of water lines shown on the final site plan for each implementing Tentative Tract Map and Tentative Parcel Map. Approval to be received in written form via email or on City of Calimesa Fire Department letterhead.
MM-PS1-5	**Impact PS1** The proposed project would increase demand for fire protection services. ***Less than significant with mitigation.***	Fire hydrants shall be designed and placement specified by the Fire District at the time water lines to the project area are built or as a condition of development project approval.	Prior to site plan approval	City of Calimesa Engineering Department and City of Calimesa Fire Department				Approval by City of Calimesa Fire Department of fire hydrant locations shown on the Tentative Tract Map and Tentative Parcel Map for each implementing project. Approval to be received in written form via email or on City of Calimesa Fire Department letterhead.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Public Services (cont.)								
MM-PS2	**Impact PS2** The proposed project would increase demand for police protection services including designating a site for public facility use within the Town Center portion of the Project site. ***Less than significant with mitigation.***	Police impact fees shall be paid to cover capital costs associated with the creation of additional facilities and improvements to service at the Summerwind at Oak Valley project site.	Prior to site plan approval	City of Calimesa Planning Department and Riverside County Sheriff's Department				Proof of Developer-paid fees based on current fee schedule to be submitted to the City of Calimesa by each developer.
MM-PS3-2	**Impact PS3** The proposed project would result in an increase of students attending local schools. ***Less than significant with mitigation.***	Prior to issuance of building permits for each phase of development, project developers shall pay statutory developer fees to the BUSD and/or provide land and improvements pursuant to the requirements established in SB 50. The amount of fees or special taxes to be paid or land and improvements to be provided will be determined based on the established state formula for determining construction costs.	Prior to issuance of building permits for each phase	Beaumont Unified School District				Proof of Developer-paid fees based on current fee schedule to be submitted to the City of Calimesa by each developer.
MM-PS5	**Impact PS5** The proposed project would increase demand for library services. ***Less than significant with mitigation.***	Project developers shall contribute impact fees either toward expansion of existing library facilities or construction of new facilities. The proposed development agreement for the project shall include the specific details of the agreement between the City and the developer on satisfying the requirements of this mitigation measure.	Prior to issuance of building permits for each phase	Riverside County Library System			DIF fees are for library construction and books. Use of libraries covers residences and workers in the area. All development impact fees will be paid by the developer unless otherwise modified through a development agreement.	Proof of Developer-paid fees based on current fee schedule to be submitted to the City of Calimesa by each developer.
Transportation and Traffic								
MM-T1-13	**Impact T1** The proposed project would potentially impact the LOS in Phase 1 for the intersections listed in Table 3.10-5. ***Less than significant with mitigation.***	Roberts Road shall be constructed south to the existing Roberts Road segment that allows connection to Cherry Valley Boulevard as an interim two-lane 32-foot pavement section.	Prior to completion of OVTC Phase 1[1]	City of Calimesa Public Works Departments				

[1] Phasing regarding traffic improvements cited in this MMRP reflects the phasing identified in the Oak Valley Town Center Traffic Phasing Evaluation (Urban Crossroads 2020). These phases are equivalent to or coincide with Phase 2 as identified in the 2005 EIR.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T2-1	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation***	A traffic signal and turn lane improvements shall be installed at the intersection of Calimesa Boulevard and Singleton Road. Refer to Phasing Analysis for specific improvements and timing.	Prior to completion of OVTC Phases 3 and 4	City of Calimesa Public Works Departments				
MM-T2-2	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	A north/south cross-street stop control and turn lane improvements shall be installed at the intersection of Roberts Road/Woodhouse Road and Singleton Road.	Prior to completion of OVTC Phase 1	City of Calimesa Public Works Departments				
MM-T2-3	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The extension of Singleton Road from Roberts Road/Woodhouse Road to the TAZ "T" west boundary shall be constructed as an interim two-lane 32-foot pavement section.	Prior to completion of OVTC Phase 1	City of Calimesa Public Works Departments				
MM-T2-10	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in the I-10 Freeway/Cherry Valley Interchange improvement project.	Prior to completion of Phase 2 Residential and Commercial Development	City of Calimesa Public Works Departments			Mitigation Measure listed in Phase 2 for both commercial and residential in the TIA pages 1-16 and 1-19.	

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T2-11	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in the installation of interim traffic signal improvements at the intersection of Calimesa Boulevard and Singleton Road.	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments			Mitigation Measure listed in Phase 2 for both commercial and residential in the TIA pages 1-16 and 1-19. A portion of the improvement is outside of SP.	
MM-T2-12	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Turn lane improvements shall be provided at the intersection of Roberts Road and "J" Street (Cherry Valley Boulevard).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments			PA A-3 has been mass graded.	
MM-T2-13	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	"J" Street shall be widened from the I-10 Southbound ramps to Roberts Road at its ultimate half-section width as an Urban Arterial roadway (134-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments			PA A-3 has been mass graded.	
MM-T2-14	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road from "J" Street to the TAZ "D" west boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T2-15	**Impact T2** The proposed project would potentially impact the LOS in Phase 2 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road shall be widened from the TAZ "D" west boundary to the TAZ "C" north boundary at its ultimate half-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments				
MM-T3-7	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road from the westerly edge of TAZ "P" to San Timoteo Canyon Road shall be constructed as an interim two-lane 32-foot pavement section.	Prior to completion of Phase 4 Town Center	City of Calimesa Public Works Departments				
MM-T3-15	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in the I-10 Freeway/Singleton Interchange improvement project. Refer to Phasing Analysis for specific improvements and timing.	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T3-16	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in providing turn lane improvements at the I-10 Freeway/Cherry Valley Interchange.	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T3-17	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Traffic signals and turn lane improvements shall be installed at the following intersections: ▪ Roberts Road at Singleton Road Refer to Phasing Analysis for specific improvements and timing.	Prior to completion of Phases 2, 3, and 4 Town Center	City of Calimesa Public Works Departments				
MM-T3-18	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Turn lane improvements shall be provided at the following intersections: ▪ Roberts Road at "J" Street (Cherry Valley Boulevard) ▪ Realigned Desert Lawn Drive ("G" Street) at "J" Street (Cherry Valley Boulevard)	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T3-19	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Turn lane improvements shall be provided at the following intersections: ▪ Roberts Road at "J" Street (Cherry Valley Boulevard) ▪ Realigned Desert Lawn Drive ("G" Street) at "J" Street (Cherry Valley Boulevard)	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T3-20	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The realigned Desert Lawn Drive from "J" Street to the TAZ "F" east boundary shall be completed at its ultimate full-section width as a Secondary roadway (88-foot ROW).	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T3-21	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road shall be widened from the TAZ "U" south boundary to Singleton Road at its ultimate half-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T3-22	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road shall be widened from the I-10 Southbound Ramps to Roberts Road at its ultimate half-section width as an Urban Arterial roadway (134-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments				
MM-T3-23	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road from Singleton Road to the TAZ "S" north boundary shall be constructed at its ultimate full-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments				
MM-T3-24	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road from Roberts Road to the TAZ "P" west boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 2 Town Center	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T3-26	**Impact T3** The proposed project would potentially impact the LOS in Phase 3 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The realignment of Roberts Road south of Singleton Road shall be constructed as an interim 32-foot pavement section.	Prior to completion of Phase 1 Town Center	City of Calimesa Public Works Departments			Assume Roberts Rd to Cherry Valley Blvd. Planning Areas A-3 and A-6 have been mass graded.	
MM-T4-11	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in the northerly extension of Roberts Road from the northerly Summerwind Ranch project boundary to "D" Street (southerly Fiesta Property boundary) on a fair share basis.	2030 or prior to the last site plan approval in the Town Center, whichever is sooner.	City of Calimesa Public Works Departments			Improvements located outside of SP.	
MM-T4-12	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The Developer shall participate in providing turn lane improvements at the following locations: ▪ I-10 Freeway/Cherry Valley Interchange ▪ I-10 Freeway/Singleton Interchange	2030 or prior to the last site plan approval in the Town Center, whichever is sooner.	City of Calimesa Public Works Departments				
MM-T4-14	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Turn lane improvements shall be provided at the following intersections: ▪ Woodhouse Road at Singleton Road	2030 or prior to the certificate of occupancy for the Town Center project, whichever is sooner.	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T4-15	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road from the I-10 Southbound Ramps to Roberts Road shall be completed at its ultimate full-section width as an Urban Arterial roadway (134-foot ROW).	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T4-16	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road from Roberts Road to "H" Street shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).	2030 or prior to the certificate of occupancy for the Town Center project, whichever is sooner.	City of Calimesa Public Works Departments				
MM-T4-17	**Impact T4** The proposed project would potentially impact the LOS in 2030 for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road from Singleton Road to the TAZ "R" south boundary shall be completed at its ultimate full-section width as an Arterial roadway (110-foot ROW).	Prior to completion of Phase 3 Town Center	City of Calimesa Public Works Departments				
MM-T5-1	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	"J" Street shall be increased between Roberts Road and "G" Street, from the Enhanced Secondary (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Urban Arterial roadway (134-foot ROW).	Prior to General Plan build-out or prior to issuance of final occupancy certificate	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T5-2	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	San Timoteo Canyon Road shall be decreased west of Singleton Road, from the Arterial (114-foot ROW) designation in the Oak Valley Specific Plan to the recommended Divided Collector roadway (78-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments			Outside of SP	
MM-T5-3	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	San Timoteo Canyon Road shall be decreased between Singleton Road and "J" Street, from the Major Frontage roadway (90-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary Frontage roadway (76-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments			Outside of SP	
MM-T5-4	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Singleton Road shall be decreased between San Timoteo Canyon Road and "A" Street, from the Arterial roadway (114-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments				
MM-T5-5	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	"G" Street shall be decreased between San Timoteo Canyon Road and the TAZ "7b" north boundary, from the Secondary roadway (88-foot ROW) designation in the Oak Valley Specific Plan to the recommended Divided Collector roadway (78-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments			Outside of SP	

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T5-7	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	Roberts Road shall be decreased between Singleton Road and "J" Street, from the Urban Arterial roadway (134-foot ROW) designation in the Oak Valley Specific Plan to the recommended Arterial roadway (110-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments				
MM-T5-8	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	"J" Street shall be decreased between "G" Street and Champions Drive, from the Enhanced Secondary roadway (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments				
MM-T5-9	**Impact T5** The proposed project would potentially impact the LOS for General Plan Build-out for the intersections listed in Table 3.10-5 (page 3.10-29 of the EIR). ***Less than significant with mitigation.***	The realigned Desert Lawn Drive shall be decreased between "J" Street and the I-10 Freeway, from the Enhanced Secondary roadway (104-foot ROW) designation in the Oak Valley Specific Plan to the recommended Secondary roadway (88-foot ROW).	Prior to General Plan build-out	City of Calimesa Public Works Departments				
MM-T6-1	**Impact T6** The project combined with other growth up through 2030 would have significant cumulative impact. ***Less than significant with mitigation.***	Cumulative impacts from traffic growth can be mitigated by implementing the traffic improvements designated herein on a fair-share basis.	At each phase	City of Calimesa Public Works Departments				

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Transportation and Traffic (cont.)								
MM-T6-2	**Impact T6** The project combined with other growth up through 2030 would have significant cumulative impact. ***Less than significant with mitigation.***	A traffic study shall be prepared at the initiation of each new phase of the Summerwind Ranch Specific Plan, or other frequency specified by the City Engineer, as a means of monitoring traffic conditions in the study area. The study will be used to determine the effectiveness of constructed improvements, the nature of traffic growth, and whether phased improvements are sufficient. Recommendations for timing of proposed mitigation measures or new measures will be made.	At the initiation of each new phase of the project	City of Calimesa Public Works Departments				
Utilities and Service Systems								
MM-UT1-1	**Impact UT1** The proposed project would increase wastewater generation and require additional wastewater infrastructure and treatment facilities. ***Less than significant with mitigation.***	The applicant shall be responsible for payment of all wastewater related development impact fees and related charges, as determined by the water supply assessment at the time a building permit is issued for this project. Said fees include, but are not limited to, sewer treatment expansion fees and necessary permit fees.	Prior to issuance of building permits for each phase	City of Calimesa Public Works Departments/ Yucaipa Valley Water District			The project will follow the specific current plan for sewerage from the YVWD.	Proof of Developer-paid fees based on current fee schedule.
MM-UT1-2	**Impact UT1** The proposed project would increase wastewater generation and require additional wastewater infrastructure and treatment facilities. ***Less than significant with mitigation.***	Wastewater service will be denied if any of the terms and conditions is not satisfied.	On-going requirement for each phase	City of Calimesa Public Works Departments/ Yucaipa Valley Water District				Proof of meeting the terms and conditions for each implementing project to be submitted by the Developer to the YVWD for the agency's approval.
MM-UT1-3	**Impact UT1** The proposed project would increase wastewater generation and require additional wastewater infrastructure and treatment facilities. ***Less than significant with mitigation.***	The Applicant shall be responsible for complying with the Regional Water Quality Control Board (RWQCB) 2004 Basin Plan and Maximum Benefit demonstration as adopted by the Regional Board.	On-going requirement for each phase	City of Calimesa Public Works Departments/ Yucaipa Valley Water District			The project will follow the specific current plan for sewerage from the YVWD.	Proof of meeting requirements for each implementing project to be submitted by the Developer to the YVWD for the agency's approval.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Utilities and Service Systems (cont.)								
MM-UT1-4	**Impact UT1** The proposed project would increase wastewater generation and require additional wastewater infrastructure and treatment facilities. ***Less than significant with mitigation.***	This project will be required to construct and/or participate in the Oak Valley Regional Water Reclamation Facility. This facility is a wastewater treatment plant that will utilize a membrane bioreactor and denitrification facilities to both comply with the RWQCB 2004 Basin Plan and provide a high quality recycled water source for a significant portion of the irrigation uses within the development.	In accordance with Water Service Agreement with YVWD	City of Calimesa Public Works Departments/ Yucaipa Valley Water District				Proof of meeting requirements (or applicable construction fees paid) for each implementing project to be submitted by the Developer to the YVWD for the agency's approval.
MM-UT2-1	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	Adequate source water is available for domestic water supplies and recycled water supplies for both potable use and fire protection. The applicant shall be responsible for the construction or supplemental production, transmission and storage facilities to serve the project in accordance with the water supply assessment. These facilities include, but are not limited to, the construction and/or participation in the construction of reservoirs in Pressure Zones 10, 11 and 12.	Prior to each residential site plan approval	City of Calimesa Public Works Departments/ Yucaipa Valley Water District			The WSA/WV was done in 2005. In 2018 Calimesa Planning Commission found no update was needed. The project will follow the specific current plan for water service from the YVWD.	Documentation shall be provided to the City of Calimesa from YVWD indicating what facilities the development is required to install.
MM-UT2-2	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	The applicant shall be responsible for all costs associated with the preparation, recommendations and decisions resulting from the completion of a water supply assessment, if required for this project.	Prior to site plan approval	City of Calimesa Public Works Departments/ Yucaipa Valley Water District			The project will follow the specific current plan for water service from the YVWD.	Documentation shall be provided to the City of Calimesa from YVWD indicating what facilities the development is required to install.
MM-UT2-3	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	The applicant shall be responsible for the water related development impact fees and water related charges in effect at the time building permit is issued for this project.	Prior to issuance of building permits	City of Calimesa Public Works Departments/ Yucaipa Valley Water District				Proof of Developer-paid fees based on current fee schedule.

No.	Impact	Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance			
					Initials	Date	Remarks	Method of Verification
Utilities and Service Systems (cont.)								
MM-UT2-4	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	The District reserves the right to deny water service to the project if any of the District's required conditions is not satisfied.	Prior to site plan approval	City of Calimesa Public Works Departments/ Yucaipa Valley Water District				Written proof of YVWD ability to provide water service to implementing projects.
MM-UT2-5	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	The applicant shall be responsible for installing the necessary infrastructure to achieve fire protection and minimum/maximum water pressure service standards as provided for by the District.	Prior to issuance of building permits	City of Calimesa Fire Department/City of Calimesa Public Works Departments/Yucaipa Valley Water District				Site visit by City of Calimesa Public Works and City of Calimesa Fire Department.
MM-UT2-6	**Impact UT2** The proposed project would increase water demand and require additional water supply and infrastructure. ***Less than significant with mitigation.***	This project will be required to install both potable water and recycled water to each residential and commercial lot within the proposed development in order to provide sufficient water for compliance with SB 221 and SB 610. Connection to the existing recycled (non-potable) water system will be the responsibility of the applicant.	Prior to site plan approval	City of Calimesa Public Works Departments/ Yucaipa Valley Water District				Written approval by YVWD of water lines on site plans.
MM-UT3		An NPDES permit from the RWQCB will be required prior to the commencement of construction and post-development activities.	NPDES prior to construction Stormwater Management Plan post development	City of Calimesa Public Works Departments				<u>Construction Mitigation:</u> Submittal of Storm Water Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer (QSD) and Receipt of Notice of Intent (NOI) from State Water Resources Control Board (SWRCB) to the City of Calimesa. <u>Post-Construction Mitigation:</u> Review and approval of a Water Quality Management Plan (WQMP).

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Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment B

Supplementary Air Quality Analysis

September 2020

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.**helixepi**.com

September 16, 2020 HVE-02

Mr. John Ohanian
Oak Valley Development Company
10410 Roberts Road
Calimesa, CA 92320

Subject: Supplementary Air Quality Analysis for the Oak Valley Town Center Project

Dear Mr. Ohanian:

HELIX Environmental Planning, Inc. (HELIX) is submitting this letter to provide an assessment of potential air quality impacts associated with the Oak Valley Town Center (Project).

BACKGROUND

The Project site is located in the western portion of the City of Calimesa, west of Interstate 10 (I-10) and south of the Riverside-San Bernardino County line. The site is located northwest of the junction of I-10 and Highway 60. It extends from approximately a quarter-mile northwest of the Cherry Valley Boulevard/I-10 crossing to approximately a quarter-mile northwest of the Singleton Road/I-10 crossing.

Land uses for the Project site were originally planned in the Oak Valley Specific Plan 216/216A, which consisted of 6,405.5 acres within unincorporated Riverside County along the west side of I-10 to the San Timoteo Wash stretching from what is now the northerly boundary of the City of Calimesa to areas now in the City of Beaumont. The Oak Valley Specific Plan 216 was approved and the associated EIR was certified on October 6, 1988 by the Riverside County Board of Supervisors, since the City of Calimesa was not incorporated. Subsequently, Oak Valley Specific Plan Amendment 216A was approved by the Riverside County Board of Supervisors on May 22, 1990, for Phases 2-5 of the original Oak Valley Specific Plan 216. When the City of Calimesa incorporated in December 1990, the City Council adopted those portions of the amended Oak Valley Specific Plan 216/216A and its accompanying EIR within the City limits and renamed it “Oak Valley SP1.” The Oak Valley SP-1 is referred to as the “Specific Plan” throughout this document.

Subsequently, an amendment to the Specific Plan was proposed as the Summerwind Ranch at Oak Valley Project in 2005 and included approximately 2,590 acres of the Specific Plan. The amendment was proposed in recognition of the environmental sensitivity of the site, and included a change in land uses resulting from the purchase of approximately 358 acres by the Riverside Land Conservancy and future changes that could result should the option be exercised to convert the additional lands for open space

purposes. The amended Specific Plan included a variety of residential uses and open space, as well as a Town Center, located in the east-central portion of the site, west of I-10 and around the proposed junction of Roberts Road and Singleton Road. Planned uses associated with the Oak Valley Town Center included 130.1 acres of business park and 129.5 acres of commercial uses, along with open space along a drainage (Figure 1, *Adopted Specific Plan Land Use Plan*). The potential for construction of a City hall, fire station, lift station, and detention basin within the area was contemplated. The Specific Plan included a requirement for construction of barriers along the interface of residential and commercial uses, as well as at the interface between residential areas and major roadways.

An EIR was prepared to address the Summerwind Ranch at Oak Valley Project and was certified by the City Council on April 18, 2005. The EIR concluded that the Summerwind Ranch at Oak Valley Project could result in potentially significant and unmitigable environmental impacts to air quality.

PROPOSED PROJECT MODIFICATIONS

The proposed Specific Plan Amendment includes approximately 244 acres of the Summerwind Ranch Specific Plan's Oak Valley Town Center, and excludes its two southernmost planning areas. An additional 17.8 acres of adjacent off-site areas would be graded for slopes, walls, landscaping, and drainage improvements. Within the Project site, Roberts Road would be relocated further to the southwest, minor adjustments would be made to the alignment of Singleton Road, a formerly planned Street "F" would be omitted, and the locations of some land uses would be interchanged (Figure 2, *Proposed Specific Plan Land Use Plan*, and Figure 3, *Land Use Plan Comparison*). Specifically, business park uses would occur in areas previously planned for commercial use at the northeast and southwest quadrants of the Roberts Road/Singleton Road intersection, and commercial uses would primarily occur in areas previously planned for business park use along the I-10 frontage southeast of Singleton Road, at the southeast quadrant of the Roberts Road/Singleton Road intersection. These changes would increase the amount of business park uses that are located adjacent to residences, rather than along the freeway frontage.

These revisions would decrease business park land uses within the Specific Plan Amendment area from 121.1 to 119.6 acres, a decrease of approximately 1.5 acres. Proposed uses would include approximately 2,250,000 square feet (SF) of business park uses (assumed for traffic modeling purposes to include 1,020,800 SF of high-cube parcel hub warehouse and 1,229,200 SF of high-cube cold storage warehouse), or approximately 671,000 SF more than the 1,579,000 SF assumed in the original environmental impact modeling for the approved Specific Plan. The proposed uses would include fulfillment centers that would operate 24 hours per day. The structures would have solar-ready roofs. Gas lines would be run to each building for potential future use and plug-in outlets would be provided for idling trucks.

Commercial land uses would increase from 86.0 to 88.7 acres, an increase of approximately 2.7 acres. This area would accommodate approximately 751,800 SF of commercial retail uses, or approximately 74,600 SF more than the 677,200 SF assumed in the original environmental impact modeling for the approved Specific Plan. The commercial land use area is planned as a lifestyle retail center with large and medium box retailers.

There would also be minor revisions to the northern boundary of the TC-10 open space, totaling a reduction of approximately 1.4 acres. Approximately 2.0 acres of open space would be added along the

southeastern boundary of the site. Therefore, total open space would increase by 0.6 acre. Also, an approximately 5-acre lake and adjacent linear park are proposed within the commercial site. The major roadway reconfigurations would reduce the amount of total land dedicated to road right-of-way by approximately 3.8 acres. This includes an approximately 2.4-acre update to the boundary at the Singleton Road crossing of I-10. The proposed land use changes are summarized in Table 1, *Land Use Summary*.

Table 1
LAND USE SUMMARY

Planning Area	Previously Approved Plan		Proposed Plan	
	Land Use	Acres	Land Use	Acres
TC-1	Commercial	25.5	Business Park	30.1
TC-2	Business Park	34.3	Business Park	25.4
TC-3	Business Park	41.4	Business Park	64.1
TC-4	Commercial	57.0	Commercial	85.6
TC-5[1]	Business Park	45.4	Commercial	3.1
TC-6[2]	Commercial	3.5	--	--
	Subtotal Business Park	121.1		119.6
	Subtotal Commercial	86.0		88.7
TC-9A	Open Space	--	Open Space	2.0
TC-10	Open Space	12.1	Open Space	10.7
	Subtotal Open Space	12.1		12.7
	Singleton/Roberts ROW	19.1	Singleton/Roberts ROW	20.9
	F Street ROW	8.0	--	--
	--	--	I-10 Freeway ROW	2.4
	Subtotal Major Roads	27.1		23.3
Total		**246.3**		**244.3[4]**

[1] 2 acres within TC-1 is excluded from the Amendment No. 2 boundary.
[2] 45.4 acres of the Amendment No. 1 TC-5 PA are within the Amendment No. 2 boundary; 9.0 acres are outside of the Amendment No. 2 boundary.
[3] TC-6 was previously planned south of the Roberts Road/Street "F" intersection. As Street "F" is no longer proposed, this area has been absorbed into other planning areas.
[4] An additional 17.8 acres of adjacent off-site areas would be graded for slopes, walls, landscaping, and drainage improvements.
ROW=right-of-way

A lift station and water quality pond would be located along the southwestern edge of the Project site. A lake would provide storage for reclaimed water as part of a comprehensive water management plan for the area. Additional improvements include funding for improvements to the Singleton Road freeway bridge crossing and freeway access ramps, as well as full construction of Singleton Road from I-10 to the western limits of the Project site and Roberts Road from the northern to the southern limit of the Project site within the project. An equestrian trail previously planned along Singleton Road would be eliminated and a an 8-foot paseo within the Singleton Road right-of-way would be provided from the I-10 freeway to the western edge of the Project site. The Project proponent would be required to implement water, recycled water, and sewer infrastructure in accordance with current plans of the Yucaipa Valley Water District (YVWD), which differ from the plans at the time the Specific Plan was amended in 2005.

The proposed revisions would alter the development standards for business park uses. The maximum-sized warehouse, storage facility, parcel hub and logistics facility would be modified from 250,000 SF to 707,000 SF. Transport refrigeration units would not be permitted to operate on the side of warehouses adjacent to residences within the E-2 Townhomes, B-2 Garden Courts, B-3 Bungalows, and A-8 Cottages. TRUs would also not be permitted to operate on the side of the warehouse adjacent to the B-1 Community Recreation or TC-10 Open Space. Similarly, if generators are installed, they would be located on the side of the warehouse that faces away from these locations. The minimum required setback from adjacent sensitive receptor buildings would be decreased from 500 feet to 65 feet. The specific warehouse setback provisions that are proposed to be altered through this Project were not in place when the Summerwind Ranch Specific Plan was adopted in 2005. Rather, those provisions were approved separately by the City in 2016, through adoption of Ordinance 343. A Health Risk Assessment is included herein addressing potential impacts of these uses on all adjacent residential planning areas.

The Calimesa Municipal Code (CMC) (as revised in 2016 through Ordinance 343) requires a minimum separation of 250 feet between adjacent warehouses on the same or different parcels. The revised Specific Plan would include no minimum distances between adjacent warehouse, storage facility, parcel hub or distribution facility uses, whether on the same or separate lots or parcels; however, building setbacks shall comply with Table 18.30.040 of the City of Calimesa Development Code.

The Project proposes to modify parking standards for warehouse distribution uses that reduce the required number of spaces for buildings exceeding 40,000 SF. Specifically, the CMC requires the provision of 1 parking space per 1,000 SF of gross floor area for warehouse and wholesaling uses. The Specific Plan would instead allow the number of required parking spaces for warehouses to be the total of:

- 1 space per 1,000 SF for the first 40,000 SF of gross floor area;
- 1 space per 3,000 SF for over 40,000 SF of gross floor area; and
- 1 space per 250 SF of gross floor area for the office portion of the building.

The size of the required parking spaces also would be reduced from 10' X 19' to 9' X 19'.

The approved Specific Plan contemplated special feature monumentation at Cherry Valley Boulevard/ Roberts Road and Singleton Road/Roberts Road. The Specific Plan modifications would potentially allow a pylon sign as part of this monumentation, subject to future site plan approvals. Commercial/Business monuments or pylon signs also would potentially be allowed along I-10 as illustrated on Specific Plan Figures III-21 and IV-26, also subject to future approvals.

The proposed design guideline revisions include a requirement that large building facades of business park uses be articulated and screened. Large wall planes would be broken with offsets and the use of color and other ornamental architectural features to the extent possible. Business park buildings would be encouraged, but would not be required, to comply with the Specific Plan design guideline that no wall should have a blank, uninterrupted length exceeding 30 feet without including a change in texture, change in plane, window, lattice, tree, or equivalent element. They also would not be required to use heavy timber, rustic weathered wood, or brick or stone. Building entries and office areas are to be considered as opportunities to create building focal points with the use of varied massing, wall plane offsets, windows, colors, and other architectural features.

Planning area and perimeter street edges would be screened/softened with appropriate landscape material and/or decorative walls. Specifically, walls, berms, or a combination thereof would be used to provide visual screening and sound attenuation between business park buildings and adjacent residential development and trails within community open spaces. The barrier between the business park planning areas TC-1 and TC-2 and adjacent residences would be 14 to 15 feet tall sounds walls, and may be comprised of a combination of berm and/or block wall. For visual screening the Specific Plan provides that a block wall, berming or a combination of both will be used to screen views of trailers, docks, and truck and trailer parking on Planning Areas TC-1, TC-2, and TC-3 visible from residential uses and open space. Screening wall heights will be determined at the time of the Development Plan Review and CUP stage and trees may also be considered to provide visual screening. A vegetative barrier in addition to the wall/berming would also be required along the northern edges of Planning Areas TC-1 and TC-2 as well as along the western boundary of Planning Area TC-2.

Tiered vegetative landscaping, including trees with finely needled leaves, like Deodar, would be installed along the entire length of the northern Project boundary and the northernmost 1,000 linear feet of the western Project boundary. It shall be maintained as part of the Project's landscaped areas. Landscape plans would be subject to review and approved by the City.

In addition to the proposed revisions to the Specific Plan described above, the Project proposes a General Plan Amendment to reflect the revised Specific Plan and a Tentative Parcel Map application to establish future fee title lots to accommodate the commercial and business park land uses. At a future date, the applicant will submit a Development Plan Review application(s) pursuant to CMC Section 18.90 and CUP application(s) for warehouses pursuant to CMC Section 18.30 to approve the approximately 2.25 million SF of business park/warehouse uses. The Project would comply with applicable regulations and relevant mitigation measures included in the existing certified EIR (SCH# 2004061035).

Key Design Features

The following Project design features, as described above, were incorporated into the air quality modeling.

- The applicant or its successor shall install tiered vegetative landscaping, which shall include a combination of evergreen trees and shrubs along the entire length of the northern Project boundary and the northernmost 1,000 linear feet of the western Project boundary, extending 165 feet beyond the Business Park uses along the site boundaries, as shown in Figure 4, *Vegetative Barrier*. Trees would have finely needled leaves and plant selections would be consistent with the *Landscaping Guidance for Improving Air Quality Near Roadways* (SMAQMD 2020). Vegetation would be planted as soon as possible following finish grading, with plant spacing such that the vegetation would form a vegetative barrier at least 33 feet thick and least 16 feet in height. It shall be maintained as part of the Project's landscaped areas to prevent gaps. Landscape plans shall be reviewed and approved by the City.

- Transport refrigeration units (TRUs)would not be permitted to operate on the side of warehouses adjacent to residences within the E-2 Townhomes, B-2 Garden Courts, B-3 Bungalows, and A-8 Cottages. TRUs would also not be permitted to operate on the side of the warehouses adjacent to the B-1 Community Recreation or TC-10 Open Space.

- If a residential use remains within TC-1A Commercial at the time of Development Plan Review for the TC-1 Business Park, the need for a landscape barrier to attenuate air pollution will be addressed as part of that review process.

- Based on the experience of the warehouse owner, trucks using transport refrigeration units are assumed to comprise 25 percent of four-axle trucks.

- In accordance with state air quality regulations, trucks equipped with TRUs are not allowed to idle more than five minutes. To comply with this regulation, loading docks would be equipped with plug-in outlets for idling trucks.

- All off-road diesel-powered construction equipment greater than 50 horsepower used for construction of the OVTC retail uses shall be outfitted with a California Air Resources Board (CARB) certified Level 3 diesel particulate filter (DPF).

- Zero-volatile organic compound (VOC) paint will be used in construction of OVTC retail uses.

ANALYSIS OF PROPOSED CHANGE IN LAND USES

The approach to this analysis was to determine the difference between what is proposed in the Summerwind EIR and in the Project for air quality impacts. This analysis uses traffic data provided by Urban Crossroads (2020).

Air Quality Analysis

Methodology

Criteria pollutant and ozone precursor emissions from Project construction and operation are assessed using the CARB approved California Emission Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod has the ability to calculate mobile (i.e., vehicular), area source, and stationary source emissions. CalEEMod allows land use selections that include project land use types, sizes, and metric specifics.

Construction

CalEEMod incorporates CARB's EMFAC2014 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. CalEEMod is designed to model construction emissions for land development projects and allows for the input of project-specific information, such as the number of equipment, hours of operations, duration of construction activities, and selection of emission control measures. The analysis assessed maximum daily emissions from individual construction activities, including grading, building construction, paving, and architectural coating.

Construction would require heavy equipment during grading, building construction, and paving. Construction equipment estimates relied on default values in CalEEMod based on land use size. The construction schedule was determined by using CalEEMod defaults, input from the Project Applicant, and standard assumptions for similarly sized projects, taking into consideration the size of the Project in order to estimate necessary construction activities and length of days per construction activity. In general, Project development was assumed to start in late 2020 and be completed as early as the end of

2031. Mass grading of the entire Project site would begin in late 2020 and continue through to the end of 2021. Development of Planning Area TC-3 would occur over the next 18 months with development of Planning Areas TC-1 and TC-2 following. The remaining commercial parcels would be developed following completion of the business park parcels in 2025 and will be developed ratably over the following 7-year period.

In order to accurately capture the maximum daily emission rates associated with potential concurrent construction activities associated with the whole of the Summerwind Ranch Specific Plan Area, updated modeling also included construction activities associated with the development of The Commons, which would include development of 75,200 square feet of commercial land uses on approximately 11 acres within the southern portion of the Town Center, and approximately 3,000 residential units on the land to the west and north owned by San Gorgonio Land LLC. Based on details provided by Rich Rowland, the developer of The Commons, construction is expected to begin in the first quarter of 2021 and require approximately a year and a half to complete. Based on input provided by San Gorgonio Land, LLC, the owner and developer of the residential portion of Summerwind Ranch, development of these units is expected to begin no earlier than 2025 and continue over a period of approximately 7 years.

The quantity, duration, and intensity of construction activity have an effect on the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Attachment A of this letter report.

Modeling assumed twice daily application of water, a 12 percent soil moisture content, and 15-mile per hour (MPH) speed limit during grading as required by South Coast Air Quality Management District (SCAQMD) Rule 403 and Summerwind Ranch EIR mitigation measure AQ-1. Additionally, in accordance with Summerwind Ranch EIR mitigation measure AQ-3, it was assumed the Project would use architectural coatings with a zero-VOC content. In accordance with the project design features identified above, CARB-certified Level 3 DPFs were assumed for off-road diesel-powered construction equipment greater than 50 horsepower used for construction of the OVTC retail uses.

Operations

Changes in long-term operational emissions would be based on the change in area, energy, and mobile source emissions from the Summerwind Ranch and the proposed Project conditions. This analysis is based on the operational air quality discussion in the EIR and associated Air Quality Impact Analysis (Urban Crossroads 2004). The net change in operational emissions was estimated using the CARB approved CalEEMod and CARB's EMFAC2017 emission inventory for on-road vehicles. The operational emissions analysis includes area source emissions related to consumer products and landscaping, mobile source emissions related to vehicle trips, and on-site energy consumption. Vehicle emission estimates are based on the traffic analysis prepared by Urban Crossroads. Area and energy source emissions are

based on CalEEMod defaults for the given land uses. CalEEMod modeling files are included as Attachment A.

Impacts related to the exposure of sensitive receptors to toxic air contaminants (TACs) were analyzed in accordance with the methods from the Office of Environmental Health and Hazards Assessment (OEHHA) *Air Toxics Hot Spots Program Risk Assessment Guidelines* (OEHHA 2015). The primary health risk from heavy-duty trucks is diesel particulate matter (DPM) in diesel truck exhaust. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as DPM. More than 90 percent of DPM is less than 1 micron (µm) in diameter (about 1/70th the diameter of a human hair), and thus is a subset of both PM_{10} and $PM_{2.5}$ (CARB 2020). In 1998, CARB identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. According to the OEHHA, when conducting a health risk assessment (HRA), DPM is the surrogate for whole diesel exhaust and is used as the basis for the potential health risk calculations (OEHHA 2015). Further, the potential incremental cancer risk from inhalation exposure to DPM would outweigh the potential noncancerous health impacts. When comparing diesel exhaust to the individual chemical compounds within exhaust, potential cancer risk from inhalation exposure to whole diesel exhaust would outweigh the multi-pathway cancer risk from the individual chemical compounds.[1] For this reason, there are few situations where an analysis of multi-pathway risk is necessary. The HRA provided herein assesses complete diesel exhaust emissions as DPM.

The first step of the HRA is to characterize the surrounding setting and Project-related emissions. The closest currently existing sensitive receptors are the new homes within the Lennar Wildflower at Summerwind Trails development. There are lots within approximately 250 feet of the Project site to the south. Based on the proposed development schedule, additional receptors could be present to the north and west when San Gorgonio LLC begins construction of their residential development in 2025. Construction DPM occurring on site during development of the Project's retail parcels were estimated using CalEEMod. Annual construction emissions were summed and divided over the 7-year period to estimate annual average DPM emissions. For the assessment, construction exhaust emissions were modeled as an area source the same size and shape as the commercial parcels.

Operational DPM emissions were estimated based on the daily truck trip rate included in the Trip Generation and Circulation analysis performed by Urban Crossroads (Urban Crossroads 2020). These trucks operate in two modes: stationary idling and moving on and off the site. The emissions from the trucks idling while parked on site would result in higher concentrations of DPM at nearby sensitive receptors than the emissions from the trucks while moving because, while moving, the distance from the truck to the receptors is changing and the motion of the truck tends to disperse the exhaust. For the assessment, the moving emissions were modeled as line volume sources along roadways, and the idling emissions were modeled as individual area sources at idling locations.

DPM emissions from TRUs operating on site were modeled as area sources at truck idling locations. It was assumed that 25 percent of the 4-axle trucks would have an operational TRU in operation for 5 minutes before plugging in to a dock power source. Emergency generators were modeled as point

[1] Speciation, as used in air quality analysis, is the process of defining the components or chemical compositions of a pollutant (CARB 2018).

sources. It was conservatively assumed each of the four business park buildings would include one emergency generator.

It should be noted that the Ports of Los Angeles and Long Beach, which are intimately linked with warehouse traffic in the Inland Empire area, will require all trucks picking up containers from their facilities to be powered by compressed natural gas, liquid natural gas, or electricity by the year 2030. Although this will substantially reduce the number of trucks in the Inland Empire, including the Project site, that are diesel (with a substantial related decrease in emissions), this benefit was not factored into this modeling effort, to provide a more conservative assessment of potential impacts.

Emission concentrations were then modeled using the US Environmental Protection Agency-developed AERMOD air dispersion model using a receptor spacing of 328 feet (100 meters) with additional receptors placed to produce concentrations at locations of interest. The City of Calimesa is located in SCAQMD Source Receptor Area (SRA) number 28. While most SRAs have their own meteorological station, SRA 28 does not. Therefore, data from the next closest meteorological station was utilized. Five years of meteorological data from the SCAQMD's Redlands station, approximately 8 miles to the northwest, were used to represent the atmospheric conditions at the Project site as it is the closest meteorological station to the site. These concentrations were then incorporated into the Hotspots Analysis Reporting Program (HARP) model to determine individual health risk levels. Health risk modeling files are included as Attachment B.

Studies have shown that vegetation near very fine particle sources can be effective in removing some of the most toxic particles in the air before they get mixed into the regional air mass. A 2008 study by the University of California, Davis demonstrated that different species of trees can reduce airborne particulate matter by up to between 55 and 80 percent at low wind speeds (less than 1 meter per second; Breathe California Figure 17). Greater removal rates are estimated for smaller particles less than 0.1 µm in diameter (Breathe California 2008 Table 4). Using the data published in literature and the annual average wind speed of 1.4 meters per second as measured at the Redlands meteorological station, the annual average particulate matter reduction due to vegetative landscaping would range from 21 to 55 percent for different tree species (see Chart 1 in Attachment B). It is noted that removal rates decrease at higher windspeeds, thereby resulting in a reduced benefit from vegetation. The windrose from the Redlands meteorological station, as provided in Attachment B, shows the annual average wind speed is 1.4 meters per second. It further shows that all higher speed wind events result in winds blowing from the west to the east. There are no existing or planned sensitive receptors to the east that would be downwind of the Project during these higher than average speed wind events.

Field measurements have demonstrated the effectiveness on vegetative barriers on the concentration of downwind ultrafine particles. Specifically, measurements were taken downwind of a highway that was lined with 90 percent coniferous trees (*Leyland cypress* and *Morella cerifera*) that were approximately 4 to 8 meters (13 to in 26 feet) in height and 2 to 5 meters (6.6 to 16.4 feet) thick. Measurements were taken when the wind speed was above or equal to 0.5 meter per second. These measurements found a reduction in small particles of between 62.14 and 64.03 percent behind the vegetative barriers (Lin et al 2016). As indicated above, 90 percent of DPM is less than 1 µm in diameter and thus corresponds to the ultrafine particles that were measured in this study.

U.S. Environmental Protection Agency (USEPA) *Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality* call for barriers 5 meters (16.4 feet) or higher, with a

minimum thickness of 10 meters (32.8 feet) and vegetation planted to avoid gaps in the barrier (Baldauf 2016). Research on solid noise barriers suggests that the barrier should extend at least 50 meters (164 feet) laterally beyond the area of concern in order to maximize reductions in downwind concentrations (Baldauf et al., 2016, cited in Baldauf 2016). The Sacramento Metropolitan Air Quality Management District *Landscaping Guidance for Improving Air Quality Near Roadways* (SMAQMD 2020) incorporates this guidance and provides a list of vegetation that will ensure space coverage within the first 7 to 10 years after planting. It is recommended that spacing be staggered and low vegetation be planted between trees to maximize growth space and ensure uniform coverage.

Therefore, planting tiered vegetation on the north and west borders of (within) the Project site would effectively reduce the DPM concentrations at the future Summerwind Ranch residences by 40 percent assuming fine-leaved, evergreen trees and shrubs are used and they are properly maintained to prevent gaps. To account for this reduction, a 40 percent reduction in ground level concentrations of DPM were included in the HARP model run. Vegetative barriers are not necessary along the southern border of the proposed business park uses because modeling indicates that the combination of the wind direction and distance between emission sources and sensitive receptors would result in less than significant health risk impacts without the placement of such barriers.

Summary of PEIR Impacts

Construction Related Emissions (EIR Impact AQ-1, AQ-2, and AQ-3)

The EIR determined that, assuming a worst case of 175 acres of simultaneous heavy construction at any point during the build-out lifetime of the project, major grading activity would generate approximately 340.73 pounds per day of fugitive dust during the earthmoving phases of project construction. EIR MM AQ-1 requires the implementation of dust abatement measures; however, impacts were found to be significant and unavoidable (Impact AQ-1).

For exhaust emissions of oxides of nitrogen (NO_X), reactive organic gases (ROG), and carbon monoxide (CO), the EIR assumed a conservative development schedule that included building approximately 450 dwelling units (DU), and 1,237 thousand square feet (TSF) of commercial/business space over a 24-month period. Assuming that 40 pieces of heavy equipment were operated an average of eight hours per day for three months, the estimated emissions from construction activity showed the emissions of NO_X, ROG, and CO would exceed SCAQMD thresholds. Mitigation measures MM AQ2-1, 2, and 3 were provided to reduce these emissions; however, the emissions levels for NO_X and ROG were found to remain significant for the duration of construction (Impact AQ-2).

Construction activities also generate evaporative emissions of VOCs from paints, solvents, asphalt, roofing tar, and other coatings. MM AQ3, requiring limits on weekly surface coatings to be applied and VOC-content of coatings, was found to result in a less than significant impact with mitigation (Impact AQ-3).

Long-term Operational Air Quality Impacts (EIR Impact AQ-4)

The EIR determined that the Summerwind Ranch's long-term operational emissions of ROG, NO_X, CO, and particulate matter 10 microns or less in diameter (PM_{10}) would exceed the SCAQMD thresholds by 627 percent, 443 percent, 287 percent, and 537 percent, respectively, in the unmitigated scenario.

EIR MM AQ4-1, AQ4-2, AQ4-3, AQ4-4, and AQ4-5 are required to reduce these emissions. These measures require providing on-site bicycle trails linking the facility to designated bicycle commuting routes; providing site improvements such as street lighting, street furniture, route signs, bus turnouts, and sidewalks or pedestrian paths; exceeding minimum statewide energy construction requirements on dwelling units; providing park-and-ride lots near freeway access, including development of approximately 100 parking spaces within the commercial component of the project; and providing bus turnout facilities to serve Riverside Transit Agency (RTA) Route 36.

Even with the inclusion of these mitigation measures, the Summerwind Ranch's long-term operational emissions of ROG, NO_X, CO, and PM_{10} were determined to exceed the SCAQMD thresholds by 584 percent, 380 percent, 243 percent, and 453 percent, respectively. As such, impacts were considered to be significant and unavoidable.

Consistency with the SCAQMD's AQMP (EIR Impact AQ-5)

The EIR determined that the Summerwind Ranch development would be consistent with the SCAQMD's AQMP because it is consistent with regional growth forecasts and would comply with the County's air quality program, which implements emission reduction measures contained in the AQMP. Impacts were considered to be less than significant.

Substantial Pollutant Concentrations (EIR Impact AQ-6)

The EIR determined that sensitive receptors part of the Summerwind Ranch, including residential and school uses, would not be located within a quarter mile of facilities emitting toxic pollutants and would therefore not be exposed to substantial pollutant concentrations. Impacts were considered to be less than significant.

Odors (EIR Impact AQ-7)

The EIR concluded that a wastewater treatment facility planned for the site could result in generation of objectionable odors (EIR Impact AQ-7), but that these impacts would be less than significant. As the previously planned wastewater treatment plant is no longer proposed, related odor impacts would not occur.

Substantial Carbon Monoxide Concentrations (EIR Impact AQ-8)

The EIR determined that implementation of the Summerwind Ranch development would not result in a CO hotspot and would therefore not expose a substantial number of people to adverse concentrations of CO. Impacts were considered to be less than significant.

Cumulative Impacts (EIR Impact AQ-9)

The EIR found that when project traffic is added to build-out traffic volumes, the project would not result in a significant cumulative impact related to localized concentrations of CO. The EIR did determine, however, that because the project would individually result in a significant unmitigable regional impact on air quality, it would, in conjunction with other projects, result in a significant unmitigable cumulative impact on regional air quality. The EIR further notes that although the project-related emissions would exceed SCAQMD thresholds after reasonable mitigation, the Summerwind

Ranch development is within the City's and County's growth forecasts and has been included in the City's General Plan since 1995.

Analysis of Air Quality Impacts from Change in Land Uses

Short-term Construction Impacts

Construction emissions were modeled for the development of the Oak Valley Town Center, The Commons, and neighboring San Gorgonio LLC owned residential lots using CalEEMod, as described above. The results are shown in Table 2, *Construction Period Emissions Summary*.

Table 2
CONSTRUCTION PERIOD EMISSIONS SUMMARY

Phase / Activity	Pollutant (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Grading (2020-2021)	5	50	33	<0.5	6	4
Summerwind Commons (2021-2022)	97	46	37	<0.5	6	3
TC-3 Construction (2021-2023)	6	40	52	<0.5	10	4
TC-1 and TC-2 Construction (2023-2024)	5	36	48	<0.5	8	3
Retail Parcels (2025-2031)	4	24	40	<0.5	4	1
San Gorgonio Residential (2025-2031)	44	72	87	<0.5	23	8
Peak Daily Emissions[1]	103	96	127	<0.5	27	9
Summerwind Ranch EIR Totals	200	307	130	<0.5	66	--
Net Change (percent)	**-97 (-49%)**	**-211 (-69%)**	**-3 (-2%)**	**<1**	**-38 (-58%)**	**--**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**

CalEEMod outputs are provided as Attachment A.

[1] Peak Daily VOC emissions occur in 2021 when Summerwind Commons and TC-3 Construction overlap. Peak daily emissions for all other pollutants occur when the Retail Parcels and San Gorgonio Residential developments overlap.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
SCAQMD = South Coast Air Quality Management District

As shown in Table 2, construction emissions associated with the proposed Project would be lower than construction emissions associated with the Summerwind Ranch and/or would be below significance thresholds. As such, the proposed Project modifications would not result in a new or substantially more severe significant impact to construction period air quality emissions.

Long-term Operational Air Quality Impacts

Operational emissions were modeled for the Oak Valley Town Center under the land uses assigned by the Summerwind Ranch Specific Plan and under the land uses proposed under the Project using CalEEMod as described above. The results are shown in Table 3, *Summerwind Ranch vs. Proposed Project Operational Criteria Pollutant Emissions Summary*.

The results presented in Table 3 only include land uses within the Oak Valley Town Center project site. Modeling results for the approved land uses also differs from the air pollutant emission values presented in the Summerwind EIR because of updated modeling. The analysis presented in the

Summerwind EIR was conducted using URBEMIS 2002, while the current modeling was conducted using CalEEMod (2016). URBEMIS 2002 fails to account for mobile source emissions associated with vehicle idling, starting, and evaporative loss during vehicle operation. The updated modeling also incorporates updated trip lengths and emission factors. For the purposes of this analysis, the same modeling approach was used for both existing and planned land uses, in order to provide an appropriate basis for the comparison of relative impacts.

Table 3
SUMMERWIND RANCH VS. PROPOSED PROJECT
OPERATIONAL CRITERIA POLLUTANT EMISSIONS SUMMARY

Condition	Source	Pollutant (pounds per day)					
		VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Summerwind Ranch	Area	45	<0.5	<0.5	<0.5	<0.5	<0.5
	Energy	<0.5	2	1	<0.5	<0.5	<0.5
	Mobile	113	508	1,634	7	112	48
	Total	**158**	**510**	**1,636**	**7**	**113**	**48**
Proposed Project	Area	59	<0.5	<0.5	<0.5	<0.5	<0.5
	Energy	2	18	15	<0.5	1	1
	Mobile	64	478	687	4	65	29
	Stationary	1	2	2	<0.5	<0.5	<0.5
	Total	**127**	**498**	**705**	**4**	**67**	**30**
Net Change (percent)		**-32 (-20%)**	**-12 (-2%)**	**-931 (-57%)**	**-3 (-38%)**	**-46 (-41%)**	**-18 (-37%)**
SCAQMD Thresholds		**55**	**55**	**550**	**150**	**150**	**55**

CalEEMod outputs are provided as Attachment A.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
SCAQMD = South Coast Air Quality Management District

As shown in Table 3, operational emissions associated with the proposed Project would be lower than operational emissions associated with the Summerwind Ranch. As such, the proposed Project modifications would not result in a new or substantially more severe significant impact to operational air quality emissions.

Consistency with the SCAQMD's AQMP

The proposed Project would require amendments to the City's General Plan; however, the proposed modifications would result in minor changes to the quantities and distribution of land uses on the site and would not result in substantial additional population or employment; therefore, the proposed Project would be consistent with regional growth forecasts. In addition, the proposed Project would comply with the County's air quality program, which implements emissions reductions measures contained in the AQMP, and would support policies, as mentioned in EIR, related to energy efficiency and conservation through the use of energy-efficient appliances (to comply with Title 24 requirements) and policies related to stationary pollution sources through adherence to construction practices that reduce fugitive dust and construction-related emissions (to comply with SCAQMD Rule 403). Through consistency with regional growth forecasts and implementation of these and related policies, the Project would comply with the County's air quality program and the SCAQMD's AQMP.

Substantial Pollutant Concentrations

Long-term operational emissions would primarily be generated from diesel-powered trucks visiting the Project site. The operations expected to occur at these facilities would not emit toxic chemicals other than diesel exhaust in any significant quantity. While there would be other toxic substances, such as cleaning agents, in use on site, compliance with State and federal handling regulations would ensure that emissions remain below a level of significance. The use of such substances such as cleaning agents is regulated by the 1990 Federal Clean Air Act Amendments as well as California-adopted regulations for the chemical composition of consumer products.

Acute Project-Related Emission Impacts

Exposure to diesel exhaust can result in immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. However, according to the rulemaking on *Identifying Particulate Emissions from Diesel-Fueled Engines as a Toxic Air Contaminant* (CARB 2010), the available data from studies of humans exposed to diesel exhaust are not sufficient for deriving an acute non-cancer health risk guidance value. While the lung is a major target organ for diesel exhaust, studies of the gross respiratory effects of diesel exhaust in exposed workers have not provided sufficient exposure information to establish a short-term non-cancer health risk guidance value for respiratory effects. Since there are no significant emissions of toxic air pollutants that cause short-term acute health effects in the Project vicinity, the potential for short-term acute exposure would be less than significant.

Carcinogenic and Chronic Project-Related Emission Impacts

The Project is conservatively assumed to operate 24 hours per day and 7 days per week. Source locations were modeled based on the site plan and assuming a minimum required setback decreased from 500 feet to 65 feet. An approximate representation of the roadway was obtained by placing line volume sources along the roads on site and off site leading to I-10 to characterize the emissions at the sensitive receptors near the Project site. For other sensitive receptors further from the Project site but near the roads the trucks would travel, it is assumed that the health risk levels from the Project traffic would be low compared to the total risk from all existing road traffic.

With the conservative modeling technique used (i.e., assuming that an individual stays outdoors at his or her residence 24 hours per day for 30 years, which is the State-required period of time that HRAs must use for analysis), the maximally exposed sensitive receptor would be exposed to an incremental inhalation cancer risk of no more than 8.67 in 1 million, which is lower than the SCAQMD CEQA significance threshold of 10 in 1 million. The Chronic Hazard Index would be 0.0085, which is lower than the significance threshold of 1.0.

The cancer burden is an estimate of the number of cancer cases expected from a 30-year exposure to Project TAC emissions. The cancer burden is calculated by multiplying the number of people exposed by the cancer risk at the maximum individual exposed resident, which is 8.67×10^{-6}. In this case, the number of people exposed is the number of people living in the residences within the 1 per 1 million

contour. Based on review of the Summerwind Ranch land use plan, it is expected that up to 1,516 dwelling units could be built within the 1 per 1 million contour. Assuming an average household size of 2.88 occupants per dwelling unit, consistent with Table E-2 of Appendix E-2 of the County of Riverside General Plan, the cancer burden is estimated to be 0.0379, which is less than the SCAQMD threshold of 0.5. Thus, no significant health risk would occur from Project-related diesel exhaust, and no mitigation is necessary. This analysis, therefore, supports reducing setback distances between warehouse and residential buildings to 65 feet based on this site configuration.

Substantial Carbon Monoxide Concentrations

A CO hot spot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. The EIR evaluated all intersections that would operate at level of service (LOS) D, E, or F for CO hot spots, per SCAQMD criteria. Table 4, *Summerwind Ranch vs. Proposed Project Intersection Level of Service*, shows the intersections that would be affected by the proposed Project and the corresponding LOS under both the Summerwind Ranch and proposed Project conditions.

Table 4
SUMMERWIND RANCH VS. PROPOSED PROJECT INTERSECTION LEVEL OF SERVICE

Intersection	Level of Service			
	Summerwind Ranch		Proposed Project	
	AM	PM	AM	PM
1. Woodhouse – Roberts Road / Singleton Road	B	C	N/A	N/A
2. I-10 EB Ramps / Singleton Road	B	C	B	C
3. I-10 WB Ramps / Singleton Road	C	C	C	C
4. Calimesa Bl. / Singleton Road	C	C	C	C
5. Realigned Roberts Road / Singleton Road	C	C	C	C
6. TC-4 Access / Singleton Road	N/A	N/A	A	B

Source: Urban Crossroads 2020
N/A = not applicable (intersection does not exist under condition)

As shown in Table 3, none of the intersections that would be affected by the proposed Project would operate at LOS D, E, or F upon buildout. Furthermore, as detailed in the Trip Generation and Circulation analysis, the Project would result in 8,052 fewer daily trips than previously analyzed. It can therefore be concluded that the Project would not result in a CO hot spot and would not expose a substantial number of people to adverse concentrations of CO.

Cumulative Impacts

Consistent with the determination in the EIR, when Project traffic is added to build-out traffic volumes, the Project would not result in a significant cumulative impact related to localized concentrations of CO. In addition, although the Project would result in a reduction in emissions for most pollutants over what was analyzed in the EIR, emissions would still exceed thresholds and the cumulative impact on regional air quality would remain significant and unmitigable.

CONCLUSION

The proposed Project changes would not result in new significant air quality-related impacts or a substantial increase in the severity of previously identified significant impacts per CEQA.

Sincerely,



Victor Ortiz
Senior Air Quality Specialist

Attachments:

Figure 1, Adopted Specific Plan Land Use Plan
Figure 2, Proposed Specific Plan Land Use Plan
Figure 3, Land Use Plan Comparison
Figure 4, Vegetative Barrier

Attachment A, CalEEMod Modeling Results
Attachment B, Health Risk Assessment Modeling Files

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STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	***5.4***	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	130.1	--	--
COMMERCIAL	129.5	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	***315.5***	***--***	***--***
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.2	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	***1493.1***	--	--
MAJOR ROADS	105.1	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Adopted Specific Plan Land Use Plan

Figure 1

STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	***5.4***	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	128.6	--	--
COMMERCIAL	134.2	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	318.7	--	--
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.8	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	1,493.7	--	--
MAJOR ROADS	101.3	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Specific Plan Amendment No. 1 Boundary

Specific Plan Amendment No. 2 Boundary

Potential open space dedication subject to future Caltrans corridor design widths

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Proposed Specific Plan Land Use Plan

Figure 2



Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Land Use Plan Comparison

Figure 3

Oak Valley Town Center



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0 500 Feet

Source: Aerial (Maxar, 2018)

HELIX Environmental Planning

Vegetative Barrier

Figure 4

Attachment A

CalEEMod Modeling Results

Oak Valley Town Center - Grading

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1,229.20	1000sqft	64.10	1,229,200.00	0
Unrefrigerated Warehouse-No Rail	1,020.80	1000sqft	57.50	1,020,800.00	0
Regional Shopping Center	751.80	1000sqft	87.60	751,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Oak Valley Town Center - Grading - Riverside-South Coast County, Winter

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Assumptions provided by Birtcher

Grading -

Vehicle Trips - Modeling for construction

Consumer Products - Modeling for construction

Area Coating -

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Construction Off-road Equipment Mitigation - BMPs in compliance with Rule 403

Oak Valley Town Center - Grading - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	465.00	261.00
tblConstructionPhase	PhaseEndDate	6/28/2024	11/15/2021
tblConstructionPhase	PhaseStartDate	9/17/2022	11/16/2020
tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	NT24NG	0.30	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24NG	3.25	0.00
tblEnergyUse	T24NG	1.92	0.00
tblEnergyUse	T24NG	2.00	0.00
tblLandUse	LotAcreage	28.22	64.10
tblLandUse	LotAcreage	23.43	57.50
tblLandUse	LotAcreage	17.26	87.60
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5498	50.2598	32.6106	0.0640	8.8969	2.1753	11.0722	3.6558	2.0012	5.6570						
2021	4.2842	46.4557	31.4753	0.0639	8.8969	1.9867	10.8836	3.6558	1.8277	5.4835						
Maximum	**4.5498**	**50.2598**	**32.6106**	**0.0640**	**8.8969**	**2.1753**	**11.0722**	**3.6558**	**2.0012**	**5.6570**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5498	50.2598	32.6106	0.0640	4.1266	2.1753	6.3018	1.6777	2.0012	3.6790						
2021	4.2842	46.4557	31.4753	0.0639	4.1266	1.9867	6.1132	1.6777	1.8277	3.5054						
Maximum	**4.5498**	**50.2598**	**32.6106**	**0.0640**	**4.1266**	**2.1753**	**6.3018**	**1.6777**	**2.0012**	**3.6790**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.62**	**0.00**	**43.45**	**54.11**	**0.00**	**35.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0286**	**2.8000e-003**	**0.3070**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0286**	**2.8000e-003**	**0.3070**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	11/16/2020	11/15/2021	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 652.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000						
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**						

3.2 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605						
Total	**0.0997**	**0.0623**	**0.6524**	**1.9800e-003**	**0.2236**	**1.3500e-003**	**0.2249**	**0.0593**	**1.2500e-003**	**0.0605**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000						
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9030**	**2.1739**	**6.0769**	**1.6184**	**2.0000**	**3.6184**						

3.2 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605						
Total	**0.0997**	**0.0623**	**0.6524**	**1.9800e-003**	**0.2236**	**1.3500e-003**	**0.2249**	**0.0593**	**1.2500e-003**	**0.0605**						

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265						
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**						

3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0931	0.0559	0.5969	1.9200e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605						
Total	**0.0931**	**0.0559**	**0.5969**	**1.9200e-003**	**0.2236**	**1.3200e-003**	**0.2249**	**0.0593**	**1.2100e-003**	**0.0605**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265						
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**						

3.2 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0931	0.0559	0.5969	1.9200e-003	0.2236	1.3200e-003	0.2249	0.0593	1.2100e-003	0.0605						
Total	**0.0931**	**0.0559**	**0.5969**	**1.9200e-003**	**0.2236**	**1.3200e-003**	**0.2249**	**0.0593**	**1.2100e-003**	**0.0605**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Regional Shopping Center	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Unrefrigerated Warehouse-No Rail	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						
Unmitigated	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						
Total	**0.0286**	**2.8000e-003**	**0.3070**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0286	2.8000e-003	0.3070	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003						
Total	**0.0286**	**2.8000e-003**	**0.3070**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oak Valley Town Center - Bldgs 1 & 2 Construction

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1,229.20	1000sqft	64.10	1,229,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Schedule provided by Birtcher

Architectural Coating - Summerwind Ranch MM-AQ3: Zero-VOC paint.

Vehicle Trips - Modeling for construction

Consumer Products - Modeling for construction

Area Coating - Modeling for construction

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Oak Valley Town Center - Bldgs 1 & 2 Construction - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	1,110.00	390.00
tblConstructionPhase	PhaseEndDate	9/14/2026	5/15/2023
tblConstructionPhase	PhaseEndDate	2/16/2026	5/15/2023
tblConstructionPhase	PhaseEndDate	6/1/2026	5/15/2023
tblConstructionPhase	PhaseStartDate	6/2/2026	1/31/2023
tblConstructionPhase	PhaseStartDate	2/17/2026	1/31/2023
tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	T24NG	3.25	0.00
tblLandUse	LotAcreage	28.22	64.10
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.8000	37.3136	35.8999	0.1265	7.0547	1.0291	8.0838	1.9002	0.9674	2.8676						
2022	4.4238	34.2853	34.2100	0.1242	7.0547	0.8728	7.9275	1.9002	0.8210	2.7212						
2023	5.7555	40.3322	51.8394	0.1574	8.3736	1.3342	9.7078	2.2499	1.2483	3.4982						
Maximum	**5.7555**	**40.3322**	**51.8394**	**0.1574**	**8.3736**	**1.3342**	**9.7078**	**2.2499**	**1.2483**	**3.4982**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.8000	37.3136	35.8999	0.1265	7.0547	1.0291	8.0838	1.9002	0.9674	2.8676						
2022	4.4238	34.2853	34.2100	0.1242	7.0547	0.8728	7.9275	1.9002	0.8210	2.7212						
2023	5.7555	40.3322	51.8394	0.1574	8.3736	1.3342	9.7078	2.2499	1.2483	3.4982						
Maximum	**5.7555**	**40.3322**	**51.8394**	**0.1574**	**8.3736**	**1.3342**	**9.7078**	**2.2499**	**1.2483**	**3.4982**						

Oak Valley Town Center - Bldgs 1 & 2 Construction - Riverside-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0117**	**1.1500e-003**	**0.1257**	**1.0000e-005**	**0.0000**	**4.5000e-004**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**4.5000e-004**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0117**	**1.1500e-003**	**0.1257**	**1.0000e-005**	**0.0000**	**4.5000e-004**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**4.5000e-004**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	11/16/2021	5/15/2023	5	390	
2	Paving	Paving	1/31/2023	5/15/2023	5	75	
3	Architectural Coating	Architectural Coating	1/31/2023	5/15/2023	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,843,800; Non-Residential Outdoor: 614,600; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	516.00	201.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	103.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013						
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4984	18.4402	3.9257	0.0501	1.2871	0.0365	1.3235	0.3706	0.0349	0.4054						
Worker	2.4007	1.4413	15.3990	0.0494	5.7677	0.0340	5.8017	1.5296	0.0313	1.5609						
Total	**2.8991**	**19.8815**	**19.3247**	**0.0996**	**7.0547**	**0.0704**	**7.1252**	**1.9002**	**0.0662**	**1.9663**						

3.2 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013						
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4984	18.4402	3.9257	0.0501	1.2871	0.0365	1.3235	0.3706	0.0349	0.4054						
Worker	2.4007	1.4413	15.3990	0.0494	5.7677	0.0340	5.8017	1.5296	0.0313	1.5609						
Total	**2.8991**	**19.8815**	**19.3247**	**0.0996**	**7.0547**	**0.0704**	**7.1252**	**1.9002**	**0.0662**	**1.9663**						

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612						
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4654	17.3731	3.6646	0.0497	1.2870	0.0307	1.3177	0.3706	0.0294	0.3999						
Worker	2.2522	1.2966	14.1820	0.0476	5.7677	0.0331	5.8008	1.5296	0.0305	1.5601						
Total	**2.7175**	**18.6697**	**17.8466**	**0.0973**	**7.0547**	**0.0638**	**7.1185**	**1.9002**	**0.0598**	**1.9600**						

3.2 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612						
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4654	17.3731	3.6646	0.0497	1.2870	0.0307	1.3177	0.3706	0.0294	0.3999						
Worker	2.2522	1.2966	14.1820	0.0476	5.7677	0.0331	5.8008	1.5296	0.0305	1.5601						
Total	**2.7175**	**18.6697**	**17.8466**	**0.0973**	**7.0547**	**0.0638**	**7.1185**	**1.9002**	**0.0598**	**1.9600**						

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584						
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.3555	13.0167	3.1421	0.0484	1.2870	0.0137	1.3007	0.3705	0.0131	0.3837						
Worker	2.1184	1.1687	13.0692	0.0458	5.7677	0.0323	5.8000	1.5296	0.0297	1.5594						
Total	**2.4739**	**14.1854**	**16.2113**	**0.0942**	**7.0546**	**0.0460**	**7.1007**	**1.9001**	**0.0429**	**1.9430**						

3.2 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584						
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.3555	13.0167	3.1421	0.0484	1.2870	0.0137	1.3007	0.3705	0.0131	0.3837						
Worker	2.1184	1.1687	13.0692	0.0458	5.7677	0.0323	5.8000	1.5296	0.0297	1.5594						
Total	**2.4739**	**14.1854**	**16.2113**	**0.0942**	**7.0546**	**0.0460**	**7.1007**	**1.9001**	**0.0429**	**1.9430**						

3.3 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453						
Total	**0.0616**	**0.0340**	**0.3799**	**1.3300e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.6000e-004**	**0.0453**						

3.3 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0616	0.0340	0.3799	1.3300e-003	0.1677	9.4000e-004	0.1686	0.0445	8.6000e-004	0.0453						
Total	**0.0616**	**0.0340**	**0.3799**	**1.3300e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.6000e-004**	**0.0453**						

3.4 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708						
Total	**0.1917**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4229	0.2333	2.6088	9.1400e-003	1.1513	6.4500e-003	1.1578	0.3053	5.9400e-003	0.3113						
Total	**0.4229**	**0.2333**	**2.6088**	**9.1400e-003**	**1.1513**	**6.4500e-003**	**1.1578**	**0.3053**	**5.9400e-003**	**0.3113**						

3.4 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708						
Total	**0.1917**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4229	0.2333	2.6088	9.1400e-003	1.1513	6.4500e-003	1.1578	0.3053	5.9400e-003	0.3113						
Total	**0.4229**	**0.2333**	**2.6088**	**9.1400e-003**	**1.1513**	**6.4500e-003**	**1.1578**	**0.3053**	**5.9400e-003**	**0.3113**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						
Unmitigated	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						
Total	**0.0117**	**1.1500e-003**	**0.1257**	**1.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0117	1.1500e-003	0.1257	1.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004						
Total	**0.0117**	**1.1500e-003**	**0.1257**	**1.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oak Valley Town Center - Bldgs 3 & 4 Construction

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1,020.80	1000sqft	57.50	1,020,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Schedule provided by Birtcher

Architectural Coating - Summerwind Ranch MM-AQ3: Zero-VOC paint

Vehicle Trips - Modeling for construction

Consumer Products - Modeling for construction

Area Coating - Modeling for construction

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	1,110.00	394.00
tblConstructionPhase	PhaseEndDate	1/15/2029	11/15/2024
tblConstructionPhase	PhaseEndDate	6/19/2028	11/15/2024
tblConstructionPhase	PhaseEndDate	10/2/2028	11/15/2024
tblConstructionPhase	PhaseStartDate	10/3/2028	8/5/2024
tblConstructionPhase	PhaseStartDate	3/19/2024	5/16/2023
tblConstructionPhase	PhaseStartDate	6/20/2028	8/5/2024
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24NG	2.00	0.00
tblLandUse	LotAcreage	23.43	57.50
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.6294	26.1714	29.7203	0.1052	5.8645	0.7380	6.6025	1.5796	0.6940	2.2736						
2024	4.9871	36.0324	47.6878	0.1381	6.9934	1.1869	8.1803	1.8790	1.1099	2.9888						
Maximum	**4.9871**	**36.0324**	**47.6878**	**0.1381**	**6.9934**	**1.1869**	**8.1803**	**1.8790**	**1.1099**	**2.9888**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	3.6294	26.1714	29.7203	0.1052	5.8645	0.7380	6.6025	1.5796	0.6940	2.2736						
2024	4.9871	36.0324	47.6878	0.1381	6.9934	1.1869	8.1803	1.8790	1.1099	2.9888						
Maximum	**4.9871**	**36.0324**	**47.6878**	**0.1381**	**6.9934**	**1.1869**	**8.1803**	**1.8790**	**1.1099**	**2.9888**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**9.7100e-003**	**9.5000e-004**	**0.1044**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**9.7100e-003**	**9.5000e-004**	**0.1044**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	5/16/2023	11/15/2024	5	394	
2	Paving	Paving	8/5/2024	11/15/2024	5	75	
3	Architectural Coating	Architectural Coating	8/5/2024	11/15/2024	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,531,200; Non-Residential Outdoor: 510,400; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	429.00	167.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	86.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584						
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2954	10.8149	2.6106	0.0402	1.0693	0.0114	1.0807	0.3079	0.0109	0.3188						
Worker	1.7612	0.9716	10.8657	0.0381	4.7952	0.0269	4.8221	1.2717	0.0247	1.2964						
Total	**2.0566**	**11.7865**	**13.4763**	**0.0783**	**5.8645**	**0.0383**	**5.9027**	**1.5796**	**0.0356**	**1.6152**						

3.2 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584						
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2954	10.8149	2.6106	0.0402	1.0693	0.0114	1.0807	0.3079	0.0109	0.3188						
Worker	1.7612	0.9716	10.8657	0.0381	4.7952	0.0269	4.8221	1.2717	0.0247	1.2964						
Total	**2.0566**	**11.7865**	**13.4763**	**0.0783**	**5.8645**	**0.0383**	**5.9027**	**1.5796**	**0.0356**	**1.6152**						

3.2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769						
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2897	10.7573	2.5267	0.0400	1.0692	0.0113	1.0806	0.3078	0.0108	0.3187						
Worker	1.6649	0.8807	10.1652	0.0367	4.7952	0.0266	4.8218	1.2717	0.0245	1.2962						
Total	**1.9546**	**11.6379**	**12.6919**	**0.0768**	**5.8645**	**0.0379**	**5.9023**	**1.5796**	**0.0353**	**1.6148**						

3.2 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769						
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2897	10.7573	2.5267	0.0400	1.0692	0.0113	1.0806	0.3078	0.0108	0.3187						
Worker	1.6649	0.8807	10.1652	0.0367	4.7952	0.0266	4.8218	1.2717	0.0245	1.2962						
Total	**1.9546**	**11.6379**	**12.6919**	**0.0768**	**5.8645**	**0.0379**	**5.9023**	**1.5796**	**0.0353**	**1.6148**						

3.3 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0582	0.0308	0.3554	1.2800e-003	0.1677	9.3000e-004	0.1686	0.0445	8.6000e-004	0.0453						
Total	**0.0582**	**0.0308**	**0.3554**	**1.2800e-003**	**0.1677**	**9.3000e-004**	**0.1686**	**0.0445**	**8.6000e-004**	**0.0453**						

3.3 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0582	0.0308	0.3554	1.2800e-003	0.1677	9.3000e-004	0.1686	0.0445	8.6000e-004	0.0453						
Total	**0.0582**	**0.0308**	**0.3554**	**1.2800e-003**	**0.1677**	**9.3000e-004**	**0.1686**	**0.0445**	**8.6000e-004**	**0.0453**						

3.4 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609						
Total	**0.1808**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.3338	0.1766	2.0378	7.3600e-003	0.9613	5.3300e-003	0.9666	0.2549	4.9000e-003	0.2598						
Total	**0.3338**	**0.1766**	**2.0378**	**7.3600e-003**	**0.9613**	**5.3300e-003**	**0.9666**	**0.2549**	**4.9000e-003**	**0.2598**						

3.4 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609						
Total	**0.1808**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.3338	0.1766	2.0378	7.3600e-003	0.9613	5.3300e-003	0.9666	0.2549	4.9000e-003	0.2598						
Total	**0.3338**	**0.1766**	**2.0378**	**7.3600e-003**	**0.9613**	**5.3300e-003**	**0.9666**	**0.2549**	**4.9000e-003**	**0.2598**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						
Unmitigated	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						
Total	**9.7100e-003**	**9.5000e-004**	**0.1044**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	9.7100e-003	9.5000e-004	0.1044	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004						
Total	**9.7100e-003**	**9.5000e-004**	**0.1044**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oak Valley Town Center - Retail Construction

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	751.80	1000sqft	87.60	751,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Oak Valley Town Center - Retail Construction - Riverside-South Coast County, Winter

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Schedule provided by Birtcher

Architectural Coating - Summerwind Ranch MM-AQ3: Zero-VOC paint

Vehicle Trips - Modeling for construction

Consumer Products - Modeling for construction

Area Coating - Modeling for construction

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Construction Off-road Equipment Mitigation - Level 3 DPF

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstructionPhase	NumDays	1,550.00	1,826.00
tblEnergyUse	NT24NG	0.30	0.00
tblEnergyUse	T24NG	1.92	0.00
tblLandUse	LotAcreage	17.26	87.60
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.4616	20.7554	23.1805	0.0761	3.4813	0.5504	4.0318	0.9411	0.5176	1.4588						
2026	2.4141	20.6310	22.7717	0.0751	3.4813	0.5499	4.0312	0.9411	0.5171	1.4582						
2027	2.3681	20.5148	22.4125	0.0744	3.4813	0.5490	4.0303	0.9411	0.5163	1.4574						
2028	2.3227	20.4173	22.1049	0.0737	3.4813	0.5479	4.0292	0.9411	0.5153	1.4564						
2029	2.2753	20.3284	21.8174	0.0731	3.4812	0.5469	4.0281	0.9411	0.5143	1.4554						
2030	2.1699	15.7111	21.6319	0.0766	3.4812	0.1666	3.6478	0.9411	0.1654	1.1065						
2031	3.8017	23.7443	40.0507	0.1117	4.1854	0.5195	4.7049	1.1279	0.5182	1.6460						
Maximum	**3.8017**	**23.7443**	**40.0507**	**0.1117**	**4.1854**	**0.5504**	**4.7049**	**1.1279**	**0.5182**	**1.6460**						

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	2.4616	20.7554	23.1805	0.0761	3.4813	0.1020	3.5833	0.9411	0.0958	1.0369						
2026	2.4141	20.6310	22.7717	0.0751	3.4813	0.1014	3.5827	0.9411	0.0953	1.0364						
2027	2.3681	20.5148	22.4125	0.0744	3.4813	0.1006	3.5818	0.9411	0.0944	1.0356						
2028	2.3227	20.4173	22.1049	0.0737	3.4813	0.0995	3.5807	0.9411	0.0935	1.0346						
2029	2.2753	20.3284	21.8174	0.0731	3.4812	0.0985	3.5797	0.9411	0.0925	1.0336						
2030	2.1699	15.7111	21.6319	0.0766	3.4812	0.0407	3.5219	0.9411	0.0395	0.9806						
2031	3.8017	23.7443	40.0507	0.1117	4.1854	0.0953	4.2807	1.1279	0.0939	1.2218						
Maximum	**3.8017**	**23.7443**	**40.0507**	**0.1117**	**4.1854**	**0.1020**	**4.2807**	**1.1279**	**0.0958**	**1.2218**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**81.40**	**9.80**	**0.00**	**81.47**	**26.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**7.1500e-003**	**7.0000e-004**	**0.0769**	**1.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**7.1500e-003**	**7.0000e-004**	**0.0769**	**1.0000e-005**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2025	12/31/2031	5	1826	
2	Paving	Paving	7/31/2031	12/31/2031	5	110	
3	Architectural Coating	Architectural Coating	7/31/2031	12/31/2031	5	110	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,127,700; Non-Residential Outdoor: 375,900; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	241.00	123.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	48.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use DPF for Construction Equipment

3.2 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2080	7.8353	1.8017	0.0293	0.7875	8.2200e-003	0.7957	0.2267	7.8600e-003	0.2346						
Worker	0.8862	0.4504	5.2941	0.0198	2.6938	0.0147	2.7085	0.7144	0.0135	0.7279						
Total	**1.0942**	**8.2857**	**7.0958**	**0.0491**	**3.4813**	**0.0229**	**3.5042**	**0.9411**	**0.0214**	**0.9625**						

3.2 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.0791	0.0791		0.0744	0.0744						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.0791**	**0.0791**		**0.0744**	**0.0744**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2080	7.8353	1.8017	0.0293	0.7875	8.2200e-003	0.7957	0.2267	7.8600e-003	0.2346						
Worker	0.8862	0.4504	5.2941	0.0198	2.6938	0.0147	2.7085	0.7144	0.0135	0.7279						
Total	**1.0942**	**8.2857**	**7.0958**	**0.0491**	**3.4813**	**0.0229**	**3.5042**	**0.9411**	**0.0214**	**0.9625**						

3.2 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2034	7.7487	1.7533	0.0291	0.7875	8.1000e-003	0.7956	0.2267	7.7400e-003	0.2345						
Worker	0.8434	0.4126	4.9338	0.0191	2.6938	0.0142	2.7080	0.7144	0.0131	0.7275						
Total	**1.0467**	**8.1613**	**6.6871**	**0.0482**	**3.4813**	**0.0223**	**3.5036**	**0.9411**	**0.0208**	**0.9619**						

3.2 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.0791	0.0791		0.0744	0.0744						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.0791**	**0.0791**		**0.0744**	**0.0744**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.2034	7.7487	1.7533	0.0291	0.7875	8.1000e-003	0.7956	0.2267	7.7400e-003	0.2345						
Worker	0.8434	0.4126	4.9338	0.0191	2.6938	0.0142	2.7080	0.7144	0.0131	0.7275						
Total	**1.0467**	**8.1613**	**6.6871**	**0.0482**	**3.4813**	**0.0223**	**3.5036**	**0.9411**	**0.0208**	**0.9619**						

3.2 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1995	7.6662	1.7139	0.0290	0.7875	7.9800e-003	0.7954	0.2267	7.6200e-003	0.2343						
Worker	0.8012	0.3790	4.6140	0.0184	2.6938	0.0135	2.7073	0.7144	0.0124	0.7268						
Total	**1.0007**	**8.0452**	**6.3278**	**0.0474**	**3.4813**	**0.0214**	**3.5027**	**0.9411**	**0.0200**	**0.9611**						

3.2 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.0791	0.0791		0.0744	0.0744						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.0791**	**0.0791**		**0.0744**	**0.0744**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1995	7.6662	1.7139	0.0290	0.7875	7.9800e-003	0.7954	0.2267	7.6200e-003	0.2343						
Worker	0.8012	0.3790	4.6140	0.0184	2.6938	0.0135	2.7073	0.7144	0.0124	0.7268						
Total	**1.0007**	**8.0452**	**6.3278**	**0.0474**	**3.4813**	**0.0214**	**3.5027**	**0.9411**	**0.0200**	**0.9611**						

3.2 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1964	7.5985	1.6854	0.0288	0.7874	7.8900e-003	0.7953	0.2267	7.5400e-003	0.2342						
Worker	0.7589	0.3492	4.3349	0.0179	2.6938	0.0125	2.7063	0.7144	0.0115	0.7259						
Total	**0.9553**	**7.9476**	**6.0202**	**0.0467**	**3.4813**	**0.0204**	**3.5016**	**0.9411**	**0.0190**	**0.9601**						

3.2 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.0791	0.0791		0.0744	0.0744						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.0791**	**0.0791**		**0.0744**	**0.0744**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1964	7.5985	1.6854	0.0288	0.7874	7.8900e-003	0.7953	0.2267	7.5400e-003	0.2342						
Worker	0.7589	0.3492	4.3349	0.0179	2.6938	0.0125	2.7063	0.7144	0.0115	0.7259						
Total	**0.9553**	**7.9476**	**6.0202**	**0.0467**	**3.4813**	**0.0204**	**3.5016**	**0.9411**	**0.0190**	**0.9601**						

3.2 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1938	7.5370	1.6601	0.0287	0.7874	7.7900e-003	0.7952	0.2267	7.4500e-003	0.2341						
Worker	0.7142	0.3217	4.0727	0.0174	2.6938	0.0116	2.7054	0.7144	0.0106	0.7250						
Total	**0.9079**	**7.8587**	**5.7328**	**0.0461**	**3.4812**	**0.0194**	**3.5006**	**0.9411**	**0.0181**	**0.9592**						

3.2 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.0791	0.0791		0.0744	0.0744						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.0791**	**0.0791**		**0.0744**	**0.0744**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1938	7.5370	1.6601	0.0287	0.7874	7.7900e-003	0.7952	0.2267	7.4500e-003	0.2341						
Worker	0.7142	0.3217	4.0727	0.0174	2.6938	0.0116	2.7054	0.7144	0.0106	0.7250						
Total	**0.9079**	**7.8587**	**5.7328**	**0.0461**	**3.4812**	**0.0194**	**3.5006**	**0.9411**	**0.0181**	**0.9592**						

3.2 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1915	7.4799	1.6408	0.0286	0.7874	7.6900e-003	0.7951	0.2267	7.3500e-003	0.2341						
Worker	0.6693	0.2966	3.8341	0.0170	2.6938	0.0107	2.7046	0.7144	9.8700e-003	0.7243						
Total	**0.8608**	**7.7765**	**5.4749**	**0.0456**	**3.4812**	**0.0184**	**3.4997**	**0.9411**	**0.0172**	**0.9583**						

3.2 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.0222	0.0222		0.0222	0.0222						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.0222**	**0.0222**		**0.0222**	**0.0222**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1915	7.4799	1.6408	0.0286	0.7874	7.6900e-003	0.7951	0.2267	7.3500e-003	0.2341						
Worker	0.6693	0.2966	3.8341	0.0170	2.6938	0.0107	2.7046	0.7144	9.8700e-003	0.7243						
Total	**0.8608**	**7.7765**	**5.4749**	**0.0456**	**3.4812**	**0.0184**	**3.4997**	**0.9411**	**0.0172**	**0.9583**						

3.2 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1933	7.4886	1.6493	0.0287	0.7874	7.6800e-003	0.7951	0.2267	7.3400e-003	0.2340						
Worker	0.6215	0.2732	3.6445	0.0167	2.6938	0.0101	2.7039	0.7144	9.3100e-003	0.7237						
Total	**0.8148**	**7.7618**	**5.2938**	**0.0453**	**3.4812**	**0.0178**	**3.4990**	**0.9411**	**0.0167**	**0.9578**						

3.2 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.0222	0.0222		0.0222	0.0222						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.0222**	**0.0222**		**0.0222**	**0.0222**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1933	7.4886	1.6493	0.0287	0.7874	7.6800e-003	0.7951	0.2267	7.3400e-003	0.2340						
Worker	0.6215	0.2732	3.6445	0.0167	2.6938	0.0101	2.7039	0.7144	9.3100e-003	0.7237						
Total	**0.8148**	**7.7618**	**5.2938**	**0.0453**	**3.4812**	**0.0178**	**3.4990**	**0.9411**	**0.0167**	**0.9578**						

3.3 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0387	0.0170	0.2268	1.0400e-003	0.1677	6.3000e-004	0.1683	0.0445	5.8000e-004	0.0450						
Total	**0.0387**	**0.0170**	**0.2268**	**1.0400e-003**	**0.1677**	**6.3000e-004**	**0.1683**	**0.0445**	**5.8000e-004**	**0.0450**						

3.3 Paving - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.0496	0.0496		0.0496	0.0496						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.0496**	**0.0496**		**0.0496**	**0.0496**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0387	0.0170	0.2268	1.0400e-003	0.1677	6.3000e-004	0.1683	0.0445	5.8000e-004	0.0450						
Total	**0.0387**	**0.0170**	**0.2268**	**1.0400e-003**	**0.1677**	**6.3000e-004**	**0.1683**	**0.0445**	**5.8000e-004**	**0.0450**						

3.4 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203						
Total	**0.1308**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**						

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1238	0.0544	0.7259	3.3200e-003	0.5365	2.0200e-003	0.5385	0.1423	1.8500e-003	0.1441						
Total	**0.1238**	**0.0544**	**0.7259**	**3.3200e-003**	**0.5365**	**2.0200e-003**	**0.5385**	**0.1423**	**1.8500e-003**	**0.1441**						

3.4 Architectural Coating - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003						
Total	**0.1308**	**0.8563**	**1.7977**	**2.9700e-003**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.1238	0.0544	0.7259	3.3200e-003	0.5365	2.0200e-003	0.5385	0.1423	1.8500e-003	0.1441						
Total	**0.1238**	**0.0544**	**0.7259**	**3.3200e-003**	**0.5365**	**2.0200e-003**	**0.5385**	**0.1423**	**1.8500e-003**	**0.1441**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						
Unmitigated	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						
Total	**7.1500e-003**	**7.0000e-004**	**0.0769**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	7.1500e-003	7.0000e-004	0.0769	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004						
Total	**7.1500e-003**	**7.0000e-004**	**0.0769**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oak Valley Town Center - The Commons

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	20.00	1000sqft	0.85	20,000.00	0
High Turnover (Sit Down Restaurant)	8.50	1000sqft	0.37	8,500.00	0
Regional Shopping Center	8.50	1000sqft	0.37	8,500.00	0
Fast Food Restaurant with Drive Thru	7.50	1000sqft	0.31	7,500.00	0
Convenience Market With Gas Pumps	16.00	Pump	0.09	2,258.80	0
Medical Office Building	26.90	1000sqft	1.15	26,900.00	0
Parking Lot	496.00	Space	8.30	198,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	10			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Oak Valley Town Center - The Commons - San Diego County, Winter

Project Characteristics -

Land Use - Total site acreage is 11.44 per Section 3 of Summerwind Commons EIR Consistency Analysis (July 2020)

Construction Phase - Schedule provided by John Ohanian

Grading -

Vehicle Trips - Modeling for construction

Consumer Products - Modeling for construction

Area Coating - Modeling for construction

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	347.00
tblConstructionPhase	NumDays	30.00	64.00
tblConstructionPhase	PhaseEndDate	7/14/2022	7/29/2022
tblConstructionPhase	PhaseEndDate	5/19/2022	7/29/2022
tblConstructionPhase	PhaseEndDate	3/25/2021	3/31/2021
tblConstructionPhase	PhaseEndDate	6/16/2022	7/29/2022
tblConstructionPhase	PhaseStartDate	6/17/2022	7/4/2022
tblConstructionPhase	PhaseStartDate	3/26/2021	4/1/2021
tblConstructionPhase	PhaseStartDate	2/12/2021	1/1/2021
tblConstructionPhase	PhaseStartDate	5/20/2022	7/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0

tblEnergyUse	NT24NG	0.30	0.00
tblEnergyUse	NT24NG	195.77	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	NT24NG	195.77	0.00
tblEnergyUse	NT24NG	0.30	0.00
tblEnergyUse	T24NG	1.92	0.00
tblEnergyUse	T24NG	77.67	0.00
tblEnergyUse	T24NG	15.36	0.00
tblEnergyUse	T24NG	77.67	0.00
tblEnergyUse	T24NG	3.47	0.00
tblEnergyUse	T24NG	1.92	0.00
tblLandUse	LotAcreage	0.46	0.85
tblLandUse	LotAcreage	0.20	0.37
tblLandUse	LotAcreage	0.20	0.37
tblLandUse	LotAcreage	0.17	0.31
tblLandUse	LotAcreage	0.05	0.09
tblLandUse	LotAcreage	0.62	1.15
tblLandUse	LotAcreage	4.46	8.30
tblVehicleTrips	ST_TR	204.47	0.00
tblVehicleTrips	ST_TR	722.03	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	166.88	0.00
tblVehicleTrips	SU_TR	542.72	0.00
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	542.60	0.00
tblVehicleTrips	WD_TR	496.12	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2696	46.4503	31.3771	0.0636	8.8376	1.9865	10.8241	3.6401	1.8276	5.4676						
2022	97.0331	32.8052	37.4126	0.0754	1.5204	1.4755	2.9959	0.4102	1.3812	1.7914						
Maximum	**97.0331**	**46.4503**	**37.4126**	**0.0754**	**8.8376**	**1.9865**	**10.8241**	**3.6401**	**1.8276**	**5.4676**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2696	46.4503	31.3771	0.0636	4.0673	1.9865	6.0538	1.6620	1.8276	3.4896						
2022	97.0331	32.8052	37.4126	0.0754	1.5204	1.4755	2.9959	0.4102	1.3812	1.7914						
Maximum	**97.0331**	**46.4503**	**37.4126**	**0.0754**	**4.0673**	**1.9865**	**6.0538**	**1.6620**	**1.8276**	**3.4896**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.05**	**0.00**	**34.52**	**48.84**	**0.00**	**27.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**5.4900e-003**	**5.4000e-004**	**0.0595**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**2.1000e-004**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**5.4900e-003**	**5.4000e-004**	**0.0595**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**2.1000e-004**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2021	3/31/2021	5	64	
2	Building Construction	Building Construction	4/1/2021	7/29/2022	5	347	
3	Paving	Paving	7/4/2022	7/29/2022	5	20	
4	Architectural Coating	Architectural Coating	7/4/2022	7/29/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 160

Acres of Paving: 8.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 110,488; Non-Residential Outdoor: 36,829; Striped Parking Area: 11,904 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	111.00	45.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265						
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**						

3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446						
Total	**0.0785**	**0.0505**	**0.4987**	**1.5300e-003**	**0.1643**	**1.1300e-003**	**0.1654**	**0.0436**	**1.0500e-003**	**0.0446**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265						
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**						

3.2 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446						
Total	**0.0785**	**0.0505**	**0.4987**	**1.5300e-003**	**0.1643**	**1.1300e-003**	**0.1654**	**0.0436**	**1.0500e-003**	**0.0446**						

3.3 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013						
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**						

3.3 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1434	4.5701	1.3003	0.0119	0.3046	0.0100	0.3146	0.0877	9.5800e-003	0.0973						
Worker	0.4354	0.2800	2.7675	8.5200e-003	0.9118	6.3000e-003	0.9181	0.2419	5.8000e-003	0.2477						
Total	**0.5788**	**4.8501**	**4.0678**	**0.0204**	**1.2165**	**0.0163**	**1.2328**	**0.3296**	**0.0154**	**0.3449**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013						
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**						

3.3 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1434	4.5701	1.3003	0.0119	0.3046	0.0100	0.3146	0.0877	9.5800e-003	0.0973						
Worker	0.4354	0.2800	2.7675	8.5200e-003	0.9118	6.3000e-003	0.9181	0.2419	5.8000e-003	0.2477						
Total	**0.5788**	**4.8501**	**4.0678**	**0.0204**	**1.2165**	**0.0163**	**1.2328**	**0.3296**	**0.0154**	**0.3449**						

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612						
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**						

3.3 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1334	4.3158	1.2311	0.0117	0.3046	8.6300e-003	0.3133	0.0877	8.2500e-003	0.0960						
Worker	0.4126	0.2553	2.5680	8.2000e-003	0.9118	6.1600e-003	0.9180	0.2419	5.6700e-003	0.2475						
Total	**0.5460**	**4.5711**	**3.7991**	**0.0199**	**1.2165**	**0.0148**	**1.2313**	**0.3296**	**0.0139**	**0.3435**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612						
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**						

3.3 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.1334	4.3158	1.2311	0.0117	0.3046	8.6300e-003	0.3133	0.0877	8.2500e-003	0.0960						
Worker	0.4126	0.2553	2.5680	8.2000e-003	0.9118	6.1600e-003	0.9180	0.2419	5.6700e-003	0.2475						
Total	**0.5460**	**4.5711**	**3.7991**	**0.0199**	**1.2165**	**0.0148**	**1.2313**	**0.3296**	**0.0139**	**0.3435**						

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225						
Paving	1.0873					0.0000	0.0000		0.0000	0.0000						
Total	**2.1901**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**						

3.4 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0558	0.0345	0.3470	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335						
Total	**0.0558**	**0.0345**	**0.3470**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225						
Paving	1.0873					0.0000	0.0000		0.0000	0.0000						
Total	**2.1901**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**						

3.4 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0558	0.0345	0.3470	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.7000e-004	0.0335						
Total	**0.0558**	**0.0345**	**0.3470**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.7000e-004**	**0.0335**						

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	92.2487					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**92.4532**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

3.5 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0818	0.0506	0.5090	1.6300e-003	0.1807	1.2200e-003	0.1820	0.0479	1.1200e-003	0.0491						
Total	**0.0818**	**0.0506**	**0.5090**	**1.6300e-003**	**0.1807**	**1.2200e-003**	**0.1820**	**0.0479**	**1.1200e-003**	**0.0491**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	92.2487					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817						
Total	**92.4532**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**						

3.5 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0818	0.0506	0.5090	1.6300e-003	0.1807	1.2200e-003	0.1820	0.0479	1.1200e-003	0.0491						
Total	**0.0818**	**0.0506**	**0.5090**	**1.6300e-003**	**0.1807**	**1.2200e-003**	**0.1820**	**0.0479**	**1.1200e-003**	**0.0491**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Medical Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Fast Food Restaurant with Drive Thru	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Health Club	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
High Turnover (Sit Down Restaurant)	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Medical Office Building	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Parking Lot	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998
Regional Shopping Center	0.606234	0.039465	0.179154	0.102641	0.014368	0.005395	0.016820	0.024508	0.001929	0.001857	0.005869	0.000761	0.000998

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Oak Valley Town Center - The Commons - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Fast Food Restaurant with Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Medical Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Convenience Market With Gas Pumps	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Fast Food Restaurant with Drive Thru	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Medical Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						
Unmitigated	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						
Total	**5.4900e-003**	**5.4000e-004**	**0.0595**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000						
Landscaping	5.4900e-003	5.4000e-004	0.0595	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004						
Total	**5.4900e-003**	**5.4000e-004**	**0.0595**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Oak Valley Town Center - San Gorgonio Residential

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	3,000.00	Dwelling Unit	848.80	5,400,000.00	8580

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage provided by John Ohanian

Construction Phase - Schedule provided by John Ohanian

Vehicle Trips - Modeling for construction

Woodstoves - Modeling for construction

Consumer Products - Modeling for construction

Area Coating - Modeling for construction

Landscape Equipment - Modeling for construction

Energy Use - Modeling for construction

Construction Off-road Equipment Mitigation - BMPs in compliance with Rule 403

Oak Valley Town Center - San Gorgonio Residential - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	13,950.00	1,697.00
tblConstructionPhase	PhaseEndDate	12/4/2096	12/31/2031
tblConstructionPhase	PhaseEndDate	5/3/2089	12/31/2031
tblConstructionPhase	PhaseEndDate	11/13/2035	5/7/2030
tblConstructionPhase	PhaseEndDate	2/17/2093	12/31/2031
tblConstructionPhase	PhaseStartDate	2/18/2093	3/16/2028
tblConstructionPhase	PhaseStartDate	11/14/2035	7/1/2025
tblConstructionPhase	PhaseStartDate	7/10/2030	1/1/2025
tblConstructionPhase	PhaseStartDate	5/4/2089	3/16/2028
tblEnergyUse	NT24NG	6,030.00	0.00
tblEnergyUse	T24NG	24,566.15	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	2,550.00	0.00
tblFireplaces	NumberNoFireplace	300.00	3,000.00
tblFireplaces	NumberWood	150.00	0.00
tblLandUse	LotAcreage	974.03	848.80
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	NumberCatalytic	150.00	0.00
tblWoodstoves	NumberNoncatalytic	150.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	8.8562	62.9164	71.2817	0.2558	23.0239	1.7468	24.7708	7.4490	1.6188	9.0678						
2026	8.6488	62.5180	69.5108	0.2520	23.0239	1.7444	24.7683	7.4490	1.6165	9.0655						
2027	8.4463	62.1492	67.9482	0.2487	23.0238	1.7407	24.7645	7.4490	1.6131	9.0620						
2028	44.1888	71.8983	87.1419	0.2888	25.6058	2.2179	27.8237	8.1337	2.0563	10.1900						
2029	43.9349	71.5862	85.6279	0.2858	25.6058	2.2126	27.8184	8.1337	2.0514	10.1851						
2030	44.4316	50.9158	82.2852	0.3003	25.6057	1.0664	26.6721	8.1337	1.0607	9.1944						
2031	40.8403	36.9407	57.9339	0.2275	16.7088	0.5742	17.2830	4.4779	0.5689	5.0468						
Maximum	**44.4316**	**71.8983**	**87.1419**	**0.3003**	**25.6058**	**2.2179**	**27.8237**	**8.1337**	**2.0563**	**10.1900**						

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	8.8562	62.9164	71.2817	0.2558	18.2536	1.7468	20.0004	5.4709	1.6188	7.0897						
2026	8.6488	62.5180	69.5108	0.2520	18.2535	1.7444	19.9979	5.4709	1.6165	7.0874						
2027	8.4463	62.1492	67.9482	0.2487	18.2535	1.7407	19.9942	5.4709	1.6131	7.0840						
2028	44.1888	71.8983	87.1419	0.2888	20.8355	2.2179	23.0534	6.1556	2.0563	8.2119						
2029	43.9349	71.5862	85.6279	0.2858	20.8354	2.2126	23.0481	6.1556	2.0514	8.2070						
2030	44.4316	50.9158	82.2852	0.3003	20.8354	1.0664	21.9018	6.1556	1.0607	7.2163						
2031	40.8403	36.9407	57.9339	0.2275	16.7088	0.5742	17.2830	4.4779	0.5689	5.0468						
Maximum	**44.4316**	**71.8983**	**87.1419**	**0.3003**	**20.8355**	**2.2179**	**23.0534**	**6.1556**	**2.0563**	**8.2119**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**17.60**	**0.00**	**16.46**	**23.17**	**0.00**	**19.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**7.4837**	**2.8575**	**247.7703**	**0.0131**	**0.0000**	**1.3690**	**1.3690**	**0.0000**	**1.3690**	**1.3690**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**7.4837**	**2.8575**	**247.7703**	**0.0131**	**0.0000**	**1.3690**	**1.3690**	**0.0000**	**1.3690**	**1.3690**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2025	5/7/2030	5	1395	
2	Building Construction	Building Construction	7/1/2025	12/31/2031	5	1697	
3	Paving	Paving	3/16/2028	12/31/2031	5	990	
4	Architectural Coating	Architectural Coating	3/16/2028	12/31/2031	5	990	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3487.5

Acres of Paving: 0

Residential Indoor: 10,935,000; Residential Outdoor: 3,645,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,080.00	321.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	216.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**8.6733**	**1.1309**	**9.8042**	**3.5965**	**1.0404**	**4.6369**						

3.2 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0735	0.0374	0.4394	1.6400e-003	0.2236	1.2200e-003	0.2248	0.0593	1.1200e-003	0.0604						
Total	**0.0735**	**0.0374**	**0.4394**	**1.6400e-003**	**0.2236**	**1.2200e-003**	**0.2248**	**0.0593**	**1.1200e-003**	**0.0604**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.9030**	**1.1309**	**5.0339**	**1.6184**	**1.0404**	**2.6589**						

3.2 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0735	0.0374	0.4394	1.6400e-003	0.2236	1.2200e-003	0.2248	0.0593	1.1200e-003	0.0604						
Total	**0.0735**	**0.0374**	**0.4394**	**1.6400e-003**	**0.2236**	**1.2200e-003**	**0.2248**	**0.0593**	**1.1200e-003**	**0.0604**						

3.2 Grading - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**8.6733**	**1.1309**	**9.8042**	**3.5965**	**1.0404**	**4.6369**						

3.2 Grading - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0700	0.0342	0.4094	1.5800e-003	0.2236	1.1800e-003	0.2247	0.0593	1.0800e-003	0.0604						
Total	**0.0700**	**0.0342**	**0.4094**	**1.5800e-003**	**0.2236**	**1.1800e-003**	**0.2247**	**0.0593**	**1.0800e-003**	**0.0604**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.9030**	**1.1309**	**5.0339**	**1.6184**	**1.0404**	**2.6589**						

3.2 Grading - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0700	0.0342	0.4094	1.5800e-003	0.2236	1.1800e-003	0.2247	0.0593	1.0800e-003	0.0604						
Total	**0.0700**	**0.0342**	**0.4094**	**1.5800e-003**	**0.2236**	**1.1800e-003**	**0.2247**	**0.0593**	**1.0800e-003**	**0.0604**						

3.2 Grading - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**8.6733**	**1.1309**	**9.8042**	**3.5965**	**1.0404**	**4.6369**						

3.2 Grading - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0665	0.0315	0.3829	1.5300e-003	0.2236	1.1200e-003	0.2247	0.0593	1.0300e-003	0.0603						
Total	**0.0665**	**0.0315**	**0.3829**	**1.5300e-003**	**0.2236**	**1.1200e-003**	**0.2247**	**0.0593**	**1.0300e-003**	**0.0603**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.9030**	**1.1309**	**5.0339**	**1.6184**	**1.0404**	**2.6589**						

3.2 Grading - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0665	0.0315	0.3829	1.5300e-003	0.2236	1.1200e-003	0.2247	0.0593	1.0300e-003	0.0603						
Total	**0.0665**	**0.0315**	**0.3829**	**1.5300e-003**	**0.2236**	**1.1200e-003**	**0.2247**	**0.0593**	**1.0300e-003**	**0.0603**						

3.2 Grading - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**8.6733**	**1.1309**	**9.8042**	**3.5965**	**1.0404**	**4.6369**						

3.2 Grading - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0630	0.0290	0.3597	1.4800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602						
Total	**0.0630**	**0.0290**	**0.3597**	**1.4800e-003**	**0.2236**	**1.0300e-003**	**0.2246**	**0.0593**	**9.5000e-004**	**0.0602**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.9030**	**1.1309**	**5.0339**	**1.6184**	**1.0404**	**2.6589**						

3.2 Grading - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0630	0.0290	0.3597	1.4800e-003	0.2236	1.0300e-003	0.2246	0.0593	9.5000e-004	0.0602						
Total	**0.0630**	**0.0290**	**0.3597**	**1.4800e-003**	**0.2236**	**1.0300e-003**	**0.2246**	**0.0593**	**9.5000e-004**	**0.0602**						

3.2 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**8.6733**	**1.1309**	**9.8042**	**3.5965**	**1.0404**	**4.6369**						

3.2 Grading - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0593	0.0267	0.3380	1.4400e-003	0.2236	9.6000e-004	0.2245	0.0593	8.8000e-004	0.0602						
Total	**0.0593**	**0.0267**	**0.3380**	**1.4400e-003**	**0.2236**	**9.6000e-004**	**0.2245**	**0.0593**	**8.8000e-004**	**0.0602**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404						
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.9030**	**1.1309**	**5.0339**	**1.6184**	**1.0404**	**2.6589**						

3.2 Grading - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0593	0.0267	0.3380	1.4400e-003	0.2236	9.6000e-004	0.2245	0.0593	8.8000e-004	0.0602						
Total	**0.0593**	**0.0267**	**0.3380**	**1.4400e-003**	**0.2236**	**9.6000e-004**	**0.2245**	**0.0593**	**8.8000e-004**	**0.0602**						

3.2 Grading - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965						
Off-Road	3.2807	13.8462	23.0239	0.0699		0.4879	0.4879		0.4879	0.4879						
Total	**3.2807**	**13.8462**	**23.0239**	**0.0699**	**8.6733**	**0.4879**	**9.1613**	**3.5965**	**0.4879**	**4.0844**						

3.2 Grading - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0555	0.0246	0.3182	1.4100e-003	0.2236	8.9000e-004	0.2244	0.0593	8.2000e-004	0.0601						
Total	**0.0555**	**0.0246**	**0.3182**	**1.4100e-003**	**0.2236**	**8.9000e-004**	**0.2244**	**0.0593**	**8.2000e-004**	**0.0601**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184						
Off-Road	3.2807	13.8462	23.0239	0.0699		0.4879	0.4879		0.4879	0.4879						
Total	**3.2807**	**13.8462**	**23.0239**	**0.0699**	**3.9030**	**0.4879**	**4.3909**	**1.6184**	**0.4879**	**2.1064**						

3.2 Grading - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0555	0.0246	0.3182	1.4100e-003	0.2236	8.9000e-004	0.2244	0.0593	8.2000e-004	0.0601						
Total	**0.0555**	**0.0246**	**0.3182**	**1.4100e-003**	**0.2236**	**8.9000e-004**	**0.2244**	**0.0593**	**8.2000e-004**	**0.0601**						

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5429	20.4483	4.7019	0.0764	2.0552	0.0215	2.0766	0.5917	0.0205	0.6122						
Worker	3.9711	2.0182	23.7247	0.0887	12.0719	0.0657	12.1376	3.2015	0.0605	3.2620						
Total	**4.5141**	**22.4665**	**28.4266**	**0.1652**	**14.1270**	**0.0872**	**14.2142**	**3.7932**	**0.0810**	**3.8742**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5429	20.4483	4.7019	0.0764	2.0552	0.0215	2.0766	0.5917	0.0205	0.6122						
Worker	3.9711	2.0182	23.7247	0.0887	12.0719	0.0657	12.1376	3.2015	0.0605	3.2620						
Total	**4.5141**	**22.4665**	**28.4266**	**0.1652**	**14.1270**	**0.0872**	**14.2142**	**3.7932**	**0.0810**	**3.8742**						

3.3 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5307	20.2223	4.5757	0.0760	2.0551	0.0211	2.0762	0.5917	0.0202	0.6119						
Worker	3.7794	1.8489	22.1099	0.0855	12.0719	0.0637	12.1355	3.2015	0.0586	3.2601						
Total	**4.3102**	**22.0712**	**26.6856**	**0.1614**	**14.1270**	**0.0848**	**14.2117**	**3.7932**	**0.0788**	**3.8720**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5307	20.2223	4.5757	0.0760	2.0551	0.0211	2.0762	0.5917	0.0202	0.6119						
Worker	3.7794	1.8489	22.1099	0.0855	12.0719	0.0637	12.1355	3.2015	0.0586	3.2601						
Total	**4.3102**	**22.0712**	**26.6856**	**0.1614**	**14.1270**	**0.0848**	**14.2117**	**3.7932**	**0.0788**	**3.8720**						

3.3 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5207	20.0069	4.4727	0.0756	2.0551	0.0208	2.0759	0.5917	0.0199	0.6116						
Worker	3.5905	1.6982	20.6768	0.0826	12.0719	0.0603	12.1322	3.2015	0.0555	3.2570						
Total	**4.1111**	**21.7051**	**25.1495**	**0.1582**	**14.1269**	**0.0811**	**14.2080**	**3.7932**	**0.0754**	**3.8685**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5207	20.0069	4.4727	0.0756	2.0551	0.0208	2.0759	0.5917	0.0199	0.6116						
Worker	3.5905	1.6982	20.6768	0.0826	12.0719	0.0603	12.1322	3.2015	0.0555	3.2570						
Total	**4.1111**	**21.7051**	**25.1495**	**0.1582**	**14.1269**	**0.0811**	**14.2080**	**3.7932**	**0.0754**	**3.8685**						

3.3 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5126	19.8301	4.3984	0.0752	2.0550	0.0206	2.0756	0.5916	0.0197	0.6113						
Worker	3.4007	1.5648	19.4259	0.0801	12.0719	0.0559	12.1277	3.2015	0.0514	3.2529						
Total	**3.9133**	**21.3949**	**23.8244**	**0.1554**	**14.1269**	**0.0765**	**14.2033**	**3.7932**	**0.0711**	**3.8642**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5126	19.8301	4.3984	0.0752	2.0550	0.0206	2.0756	0.5916	0.0197	0.6113						
Worker	3.4007	1.5648	19.4259	0.0801	12.0719	0.0559	12.1277	3.2015	0.0514	3.2529						
Total	**3.9133**	**21.3949**	**23.8244**	**0.1554**	**14.1269**	**0.0765**	**14.2033**	**3.7932**	**0.0711**	**3.8642**						

3.3 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5056	19.6697	4.3324	0.0749	2.0550	0.0203	2.0753	0.5916	0.0194	0.6111						
Worker	3.2003	1.4417	18.2510	0.0780	12.0719	0.0518	12.1237	3.2015	0.0477	3.2492						
Total	**3.7060**	**21.1114**	**22.5834**	**0.1529**	**14.1268**	**0.0721**	**14.1990**	**3.7931**	**0.0671**	**3.8602**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963						
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**						

3.3 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5056	19.6697	4.3324	0.0749	2.0550	0.0203	2.0753	0.5916	0.0194	0.6111						
Worker	3.2003	1.4417	18.2510	0.0780	12.0719	0.0518	12.1237	3.2015	0.0477	3.2492						
Total	**3.7060**	**21.1114**	**22.5834**	**0.1529**	**14.1268**	**0.0721**	**14.1990**	**3.7931**	**0.0671**	**3.8602**						

3.3 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

3.3 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4998	19.5207	4.2820	0.0747	2.0549	0.0201	2.0750	0.5916	0.0192	0.6108						
Worker	2.9992	1.3289	17.1819	0.0761	12.0719	0.0481	12.1200	3.2015	0.0443	3.2458						
Total	**3.4991**	**20.8497**	**21.4639**	**0.1507**	**14.1268**	**0.0682**	**14.1950**	**3.7931**	**0.0634**	**3.8566**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

3.3 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.4998	19.5207	4.2820	0.0747	2.0549	0.0201	2.0750	0.5916	0.0192	0.6108						
Worker	2.9992	1.3289	17.1819	0.0761	12.0719	0.0481	12.1200	3.2015	0.0443	3.2458						
Total	**3.4991**	**20.8497**	**21.4639**	**0.1507**	**14.1268**	**0.0682**	**14.1950**	**3.7931**	**0.0634**	**3.8566**						

3.3 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

3.3 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5044	19.5434	4.3042	0.0748	2.0549	0.0200	2.0750	0.5916	0.0192	0.6108						
Worker	2.7853	1.2243	16.3322	0.0747	12.0719	0.0454	12.1172	3.2015	0.0417	3.2432						
Total	**3.2897**	**20.7677**	**20.6364**	**0.1495**	**14.1268**	**0.0654**	**14.1922**	**3.7931**	**0.0609**	**3.8540**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481						
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**						

3.3 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.5044	19.5434	4.3042	0.0748	2.0549	0.0200	2.0750	0.5916	0.0192	0.6108						
Worker	2.7853	1.2243	16.3322	0.0747	12.0719	0.0454	12.1172	3.2015	0.0417	3.2432						
Total	**3.2897**	**20.7677**	**20.6364**	**0.1495**	**14.1268**	**0.0654**	**14.1922**	**3.7931**	**0.0609**	**3.8540**						

3.4 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**						

3.4 Paving - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0472	0.0217	0.2698	1.1100e-003	0.1677	7.8000e-004	0.1684	0.0445	7.1000e-004	0.0452						
Total	**0.0472**	**0.0217**	**0.2698**	**1.1100e-003**	**0.1677**	**7.8000e-004**	**0.1684**	**0.0445**	**7.1000e-004**	**0.0452**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**						

3.4 Paving - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0472	0.0217	0.2698	1.1100e-003	0.1677	7.8000e-004	0.1684	0.0445	7.1000e-004	0.0452						
Total	**0.0472**	**0.0217**	**0.2698**	**1.1100e-003**	**0.1677**	**7.8000e-004**	**0.1684**	**0.0445**	**7.1000e-004**	**0.0452**						

3.4 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**						

3.4 Paving - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0445	0.0200	0.2535	1.0800e-003	0.1677	7.2000e-004	0.1684	0.0445	6.6000e-004	0.0451						
Total	**0.0445**	**0.0200**	**0.2535**	**1.0800e-003**	**0.1677**	**7.2000e-004**	**0.1684**	**0.0445**	**6.6000e-004**	**0.0451**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**						

3.4 Paving - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0445	0.0200	0.2535	1.0800e-003	0.1677	7.2000e-004	0.1684	0.0445	6.6000e-004	0.0451						
Total	**0.0445**	**0.0200**	**0.2535**	**1.0800e-003**	**0.1677**	**7.2000e-004**	**0.1684**	**0.0445**	**6.6000e-004**	**0.0451**						

3.4 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**						

3.4 Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0417	0.0185	0.2386	1.0600e-003	0.1677	6.7000e-004	0.1683	0.0445	6.1000e-004	0.0451						
Total	**0.0417**	**0.0185**	**0.2386**	**1.0600e-003**	**0.1677**	**6.7000e-004**	**0.1683**	**0.0445**	**6.1000e-004**	**0.0451**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**						

3.4 Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0417	0.0185	0.2386	1.0600e-003	0.1677	6.7000e-004	0.1683	0.0445	6.1000e-004	0.0451						
Total	**0.0417**	**0.0185**	**0.2386**	**1.0600e-003**	**0.1677**	**6.7000e-004**	**0.1683**	**0.0445**	**6.1000e-004**	**0.0451**						

3.4 Paving - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**						

3.4 Paving - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0387	0.0170	0.2268	1.0400e-003	0.1677	6.3000e-004	0.1683	0.0445	5.8000e-004	0.0450						
Total	**0.0387**	**0.0170**	**0.2268**	**1.0400e-003**	**0.1677**	**6.3000e-004**	**0.1683**	**0.0445**	**5.8000e-004**	**0.0450**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**						

3.4 Paving - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0387	0.0170	0.2268	1.0400e-003	0.1677	6.3000e-004	0.1683	0.0445	5.8000e-004	0.0450						
Total	**0.0387**	**0.0170**	**0.2268**	**1.0400e-003**	**0.1677**	**6.3000e-004**	**0.1683**	**0.0445**	**5.8000e-004**	**0.0450**						

3.5 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**34.3013**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

3.5 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.6801	0.3130	3.8852	0.0160	2.4144	0.0112	2.4256	0.6403	0.0103	0.6506						
Total	**0.6801**	**0.3130**	**3.8852**	**0.0160**	**2.4144**	**0.0112**	**2.4256**	**0.6403**	**0.0103**	**0.6506**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**34.3013**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

3.5 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.6801	0.3130	3.8852	0.0160	2.4144	0.0112	2.4256	0.6403	0.0103	0.6506						
Total	**0.6801**	**0.3130**	**3.8852**	**0.0160**	**2.4144**	**0.0112**	**2.4256**	**0.6403**	**0.0103**	**0.6506**						

3.5 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**34.3013**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

3.5 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.6401	0.2883	3.6502	0.0156	2.4144	0.0104	2.4247	0.6403	9.5300e-003	0.6498						
Total	**0.6401**	**0.2883**	**3.6502**	**0.0156**	**2.4144**	**0.0104**	**2.4247**	**0.6403**	**9.5300e-003**	**0.6498**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**34.3013**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

3.5 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.6401	0.2883	3.6502	0.0156	2.4144	0.0104	2.4247	0.6403	9.5300e-003	0.6498						
Total	**0.6401**	**0.2883**	**3.6502**	**0.0156**	**2.4144**	**0.0104**	**2.4247**	**0.6403**	**9.5300e-003**	**0.6498**						

3.5 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203						
Total	**34.2612**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**						

3.5 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.5999	0.2658	3.4364	0.0152	2.4144	9.6200e-003	2.4240	0.6403	8.8500e-003	0.6492						
Total	**0.5999**	**0.2658**	**3.4364**	**0.0152**	**2.4144**	**9.6200e-003**	**2.4240**	**0.6403**	**8.8500e-003**	**0.6492**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203						
Total	**34.2612**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**						

3.5 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.5999	0.2658	3.4364	0.0152	2.4144	9.6200e-003	2.4240	0.6403	8.8500e-003	0.6492						
Total	**0.5999**	**0.2658**	**3.4364**	**0.0152**	**2.4144**	**9.6200e-003**	**2.4240**	**0.6403**	**8.8500e-003**	**0.6492**						

3.5 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203						
Total	**34.2612**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**						

3.5 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.5571	0.2449	3.2664	0.0149	2.4144	9.0700e-003	2.4234	0.6403	8.3500e-003	0.6487						
Total	**0.5571**	**0.2449**	**3.2664**	**0.0149**	**2.4144**	**9.0700e-003**	**2.4234**	**0.6403**	**8.3500e-003**	**0.6487**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.1305					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203						
Total	**34.2612**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**						

3.5 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.5571	0.2449	3.2664	0.0149	2.4144	9.0700e-003	2.4234	0.6403	8.3500e-003	0.6487						
Total	**0.5571**	**0.2449**	**3.2664**	**0.0149**	**2.4144**	**9.0700e-003**	**2.4234**	**0.6403**	**8.3500e-003**	**0.6487**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						
Unmitigated	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						
Total	**7.4837**	**2.8575**	**247.7703**	**0.0131**		**1.3690**	**1.3690**		**1.3690**	**1.3690**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	7.4837	2.8575	247.7703	0.0131		1.3690	1.3690		1.3690	1.3690						
Total	**7.4837**	**2.8575**	**247.7703**	**0.0131**		**1.3690**	**1.3690**		**1.3690**	**1.3690**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Proposed Oak Valley Town Center - Operations

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1,229.20	1000sqft	64.10	1,229,200.00	0
Unrefrigerated Warehouse-No Rail	1,020.80	1000sqft	57.50	1,020,800.00	0
Regional Shopping Center	751.80	1000sqft	87.60	751,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2025
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Construction modeled separately

Vehicle Trips - Mobile sources modeled using EMFAC2017

Area Coating - Summerwind Ranch MM-AQ3: Zero-VOC paint

Stationary Sources - Emergency Generators and Fire Pumps -

Proposed Oak Valley Town Center - Operations - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	PhaseEndDate	12/11/2041	2/14/2024
tblLandUse	LotAcreage	28.22	64.10
tblLandUse	LotAcreage	23.43	57.50
tblLandUse	LotAcreage	17.26	87.60
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	500.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.25
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	3.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	4.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.7201	0.0000	0.0000	0.6764	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.7201**	**0.0000**	**0.0000**	**0.6764**	**0.0000**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.7201	0.0000	0.0000	0.6764	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.7201**	**0.0000**	**0.0000**	**0.6764**	**0.0000**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	59.4638	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						
Energy	1.9904	18.0942	15.1991	0.1086		1.3752	1.3752		1.3752	1.3752						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Stationary	0.8204	2.2934	2.0922	3.9400e-003		0.1207	0.1207		0.1207	0.1207						
Total	**62.2746**	**20.3903**	**17.5970**	**0.1125**	**0.0000**	**1.4970**	**1.4970**	**0.0000**	**1.4970**	**1.4970**						

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	59.4638	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						
Energy	1.9904	18.0942	15.1991	0.1086		1.3752	1.3752		1.3752	1.3752						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Stationary	0.8204	2.2934	2.0922	3.9400e-003		0.1207	0.1207		0.1207	0.1207						
Total	**62.2746**	**20.3903**	**17.5970**	**0.1125**	**0.0000**	**1.4970**	**1.4970**	**0.0000**	**1.4970**	**1.4970**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	2/15/2024	2/14/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	1,186.00	492.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Regional Shopping Center	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Unrefrigerated Warehouse-No Rail	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.9904	18.0942	15.1991	0.1086		1.3752	1.3752		1.3752	1.3752						
NaturalGas Unmitigated	1.9904	18.0942	15.1991	0.1086		1.3752	1.3752		1.3752	1.3752						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	174311	1.8798	17.0893	14.3550	0.1025		1.2988	1.2988		1.2988	1.2988						
Regional Shopping Center	4572.59	0.0493	0.4483	0.3766	2.6900e-003		0.0341	0.0341		0.0341	0.0341						
Unrefrigerated Warehouse-No Rail	5677.33	0.0612	0.5566	0.4675	3.3400e-003		0.0423	0.0423		0.0423	0.0423						
Total		**1.9904**	**18.0942**	**15.1991**	**0.1086**		**1.3752**	**1.3752**		**1.3752**	**1.3752**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Refrigerated Warehouse-No Rail	174.311	1.8798	17.0893	14.3550	0.1025		1.2988	1.2988		1.2988	1.2988						
Regional Shopping Center	4.57259	0.0493	0.4483	0.3766	2.6900e-003		0.0341	0.0341		0.0341	0.0341						
Unrefrigerated Warehouse-No Rail	5.67733	0.0612	0.5566	0.4675	3.3400e-003		0.0423	0.0423		0.0423	0.0423						
Total		**1.9904**	**18.0942**	**15.1991**	**0.1086**		**1.3752**	**1.3752**		**1.3752**	**1.3752**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	59.4638	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						
Unmitigated	59.4638	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	59.4356					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0282	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						
Total	**59.4638**	**2.7700e-003**	**0.3057**	**2.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	59.4356					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0282	2.7700e-003	0.3057	2.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003						
Total	**59.4638**	**2.7700e-003**	**0.3057**	**2.0000e-005**		**1.0900e-003**	**1.0900e-003**		**1.0900e-003**	**1.0900e-003**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	4	0.25	3	500	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (300 - 600 HP)	0.8204	2.2934	2.0922	3.9400e-003		0.1207	0.1207		0.1207	0.1207						
Total	**0.8204**	**2.2934**	**2.0922**	**3.9400e-003**		**0.1207**	**0.1207**		**0.1207**	**0.1207**						

11.0 Vegetation

Previous Summerwind Ranch

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	1,579.00	1000sqft	130.10	1,579,000.00	0
Regional Shopping Center	677.20	1000sqft	86.00	677,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2025
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Urban Crossroads 2020

Construction Phase - Construction previously analyzed

Vehicle Trips - Mobile sources modeled using EMFAC2017

Area Coating - Summerwind Ranch MM-AQ3: Zero-VOC paint

Previous Summerwind Ranch - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	PhaseEndDate	12/11/2041	2/14/2024
tblLandUse	LotAcreage	36.25	130.10
tblLandUse	LotAcreage	15.55	86.00
tblVehicleTrips	ST_TR	1.64	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	SU_TR	0.76	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	WD_TR	11.42	0.00
tblVehicleTrips	WD_TR	42.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.6831	0.0000	0.0000	0.6420	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.6831**	**0.0000**	**0.0000**	**0.6420**	**0.0000**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.6831	0.0000	0.0000	0.6420	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.6831**	**0.0000**	**0.0000**	**0.6420**	**0.0000**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	44.6939	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						
Energy	0.1807	1.6422	1.3795	9.8500e-003		0.1248	0.1248		0.1248	0.1248						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**44.8746**	**1.6443**	**1.6092**	**9.8700e-003**	**0.0000**	**0.1256**	**0.1256**	**0.0000**	**0.1256**	**0.1256**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	44.6939	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						
Energy	0.1807	1.6422	1.3795	9.8500e-003		0.1248	0.1248		0.1248	0.1248						
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**44.8746**	**1.6443**	**1.6092**	**9.8700e-003**	**0.0000**	**0.1256**	**0.1256**	**0.0000**	**0.1256**	**0.1256**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	2/15/2024	2/14/2024	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	722.00	370.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Office Park	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Office Park	16.60	8.40	6.90	33.00	48.00	19.00	82	15	3
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Office Park	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789
Regional Shopping Center	0.554334	0.035376	0.188722	0.108173	0.012711	0.004530	0.017449	0.070039	0.001415	0.001123	0.004446	0.000892	0.000789

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1807	1.6422	1.3795	9.8500e-003		0.1248	0.1248		0.1248	0.1248						
NaturalGas Unmitigated	0.1807	1.6422	1.3795	9.8500e-003		0.1248	0.1248		0.1248	0.1248						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Office Park	12632	0.1362	1.2384	1.0403	7.4300e-003		0.0941	0.0941		0.0941	0.0941						
Regional Shopping Center	4118.86	0.0444	0.4038	0.3392	2.4200e-003		0.0307	0.0307		0.0307	0.0307						
Total		**0.1807**	**1.6422**	**1.3795**	**9.8500e-003**		**0.1248**	**0.1248**		**0.1248**	**0.1248**						

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Office Park	12.632	0.1362	1.2384	1.0403	7.4300e-003		0.0941	0.0941		0.0941	0.0941						
Regional Shopping Center	4.11886	0.0444	0.4038	0.3392	2.4200e-003		0.0307	0.0307		0.0307	0.0307						
Total		**0.1807**	**1.6422**	**1.3795**	**9.8500e-003**		**0.1248**	**0.1248**		**0.1248**	**0.1248**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	44.6939	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						
Unmitigated	44.6939	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	44.6728					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0212	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						
Total	**44.6939**	**2.0800e-003**	**0.2298**	**2.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Consumer Products	44.6728					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0212	2.0800e-003	0.2298	2.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004						
Total	**44.6939**	**2.0800e-003**	**0.2298**	**2.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: RIVERSIDE
Calendar Year: 2025
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN. Note 'day' in the unit is operation day.

Season	Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STREX	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR
A	RIVERSIDE	2025	HHDT	Aggregatec	Aggregatec	Aggregatec	30042.96	4155282	343415.7	1.905162	6.771313	2.395296	0.025716	0.002548	2.11E-07	0.008892	0.026144	0.026879	0.002663	2.29E-07
A	RIVERSIDE	2025	LDA	Aggregatec	Aggregatec	Aggregatec	868166.5	32939342	4112573	0.025606	0	0.147013	0.00111	0	0.001503	0.002	0.01575	0.001206	0	0.001634
A	RIVERSIDE	2025	LDT1	Aggregatec	Aggregatec	Aggregatec	90677.77	3305089	416785.6	0.081387	0	0.218278	0.001535	0	0.002036	0.002	0.01575	0.001668	0	0.002214
A	RIVERSIDE	2025	LDT2	Aggregatec	Aggregatec	Aggregatec	279129.6	10423308	1310100	0.053629	0	0.214668	0.001177	0	0.001555	0.002	0.01575	0.001279	0	0.001692
A	RIVERSIDE	2025	LHDT1	Aggregatec	Aggregatec	Aggregatec	40582.97	1333058	556907.1	1.051698	0.074638	0.262473	0.00832	0.00096	0.000185	0.00251	0.03276	0.008716	0.001004	0.000202
A	RIVERSIDE	2025	LHDT2	Aggregatec	Aggregatec	Aggregatec	11361.41	368862.8	150471.8	1.172942	0.107631	0.162135	0.011678	0.001413	9.25E-05	0.002718	0.03822	0.012216	0.001476	0.000101
A	RIVERSIDE	2025	MCY	Aggregatec	Aggregatec	Aggregatec	37914.47	267714.7	75828.94	1.115595	0	0.261392	0.001805	0	0.002555	0.001	0.00504	0.001933	0	0.002724
A	RIVERSIDE	2025	MDV	Aggregatec	Aggregatec	Aggregatec	218575.8	7714947	1005038	0.068261	0	0.270818	0.00122	0	0.001573	0.002	0.01575	0.001323	0	0.001711
A	RIVERSIDE	2025	MH	Aggregatec	Aggregatec	Aggregatec	7921.059	62186.51	792.3199	1.439503	0	0.23243	0.037642	0	0.000192	0.003314	0.05586	0.039373	0	0.000208
A	RIVERSIDE	2025	MHDT	Aggregatec	Aggregatec	Aggregatec	18510.35	1125257	202307	0.890756	0.36776	1.742883	0.00898	0.000299	8.5E-05	0.003	0.05586	0.00939	0.000312	9.24E-05
A	RIVERSIDE	2025	OBUS	Aggregatec	Aggregatec	Aggregatec	979.5941	53621.54	15462.63	0.797659	0.264697	0.763951	0.007867	8.4E-05	0.000186	0.003	0.05586	0.008238	8.78E-05	0.000202
A	RIVERSIDE	2025	SBUS	Aggregatec	Aggregatec	Aggregatec	1756.999	59641.76	16229.92	4.070098	3.160442	0.920925	0.02205	0.00281	4.45E-05	0.002649	0.3192	0.023059	0.002937	4.84E-05
A	RIVERSIDE	2025	UBUS	Aggregatec	Aggregatec	Aggregatec	487.5779	66878.6	1950.312	0.31496	0	0.168879	0.002533	0	0.00018	0.005478	0.037664	0.002666	0	0.000196
A	RIVERSIDE	2025	Aggregate	Aggregate	Aggregate	Aggregate	1606107	61875189	8207863	0.220545	0.306161	0.321867	0.003239	0.000211	0.001338	0.002499	0.018023	0.003428	0.00022	0.001454
S	RIVERSIDE	2025	HHDT	Aggregatec	Aggregatec	Aggregatec	30042.96	4155282	343415.7	1.798418	6.442157	2.395294	0.025716	0.002253	2.11E-07	0.008892	0.026144	0.026879	0.002355	2.29E-07
S	RIVERSIDE	2025	LDA	Aggregatec	Aggregatec	Aggregatec	868166.5	32939342	4112573	0.023839	0	0.14104	0.001102	0	0.001492	0.002	0.01575	0.001197	0	0.001622
S	RIVERSIDE	2025	LDT1	Aggregatec	Aggregatec	Aggregatec	90677.77	3305089	416785.6	0.075695	0	0.209928	0.001523	0	0.002021	0.002	0.01575	0.001656	0	0.002198
S	RIVERSIDE	2025	LDT2	Aggregatec	Aggregatec	Aggregatec	279129.6	10423308	1310100	0.05022	0	0.206912	0.001169	0	0.001544	0.002	0.01575	0.00127	0	0.001679
S	RIVERSIDE	2025	LHDT1	Aggregatec	Aggregatec	Aggregatec	40582.97	1333058	556907.1	0.990785	0.074638	0.253383	0.00832	0.00096	0.000185	0.00251	0.03276	0.008716	0.001004	0.000202
S	RIVERSIDE	2025	LHDT2	Aggregatec	Aggregatec	Aggregatec	11361.41	368862.8	150471.8	1.107579	0.107631	0.156806	0.011678	0.001413	9.25E-05	0.002718	0.03822	0.012216	0.001476	0.000101
S	RIVERSIDE	2025	MCY	Aggregatec	Aggregatec	Aggregatec	37914.47	267714.7	75828.94	0.970183	0	0.24765	0.001805	0	0.002555	0.001	0.00504	0.001933	0	0.002724
S	RIVERSIDE	2025	MDV	Aggregatec	Aggregatec	Aggregatec	218575.8	7714947	1005038	0.063797	0	0.260331	0.001211	0	0.001562	0.002	0.01575	0.001314	0	0.001699
S	RIVERSIDE	2025	MH	Aggregatec	Aggregatec	Aggregatec	7921.059	62186.51	792.3199	1.343983	0	0.223602	0.037642	0	0.000192	0.003314	0.05586	0.039373	0	0.000208
S	RIVERSIDE	2025	MHDT	Aggregatec	Aggregatec	Aggregatec	18510.35	1125257	202307	0.838829	0.358526	1.740227	0.00898	0.000255	8.5E-05	0.003	0.05586	0.00939	0.000266	9.24E-05
S	RIVERSIDE	2025	OBUS	Aggregatec	Aggregatec	Aggregatec	979.5941	53621.54	15462.63	0.743606	0.251548	0.755271	0.007867	7.46E-05	0.000186	0.003	0.05586	0.008238	7.8E-05	0.000202
S	RIVERSIDE	2025	SBUS	Aggregatec	Aggregatec	Aggregatec	1756.999	59641.76	16229.92	3.827543	3.225925	0.915828	0.02205	0.002376	4.45E-05	0.002649	0.3192	0.023059	0.002484	4.84E-05
S	RIVERSIDE	2025	UBUS	Aggregatec	Aggregatec	Aggregatec	487.5779	66878.6	1950.312	0.308363	0	0.160597	0.002533	0	0.00018	0.005478	0.037664	0.002666	0	0.000196
S	RIVERSIDE	2025	Aggregate	Aggregate	Aggregate	Aggregate	1606107	61875189	8207863	0.207342	0.292266	0.314992	0.003232	0.000196	0.001328	0.002499	0.018023	0.00342	0.000205	0.001444
W	RIVERSIDE	2025	HHDT	Aggregatec	Aggregatec	Aggregatec	30042.96	4155282	343415.7	1.893012	7.225862	2.395295	0.025716	0.002956	2.11E-07	0.008892	0.026144	0.026879	0.003089	2.29E-07
W	RIVERSIDE	2025	LDA	Aggregatec	Aggregatec	Aggregatec	868166.5	32939342	4112573	0.024595	0	0.146913	0.001102	0	0.001492	0.002	0.01575	0.001197	0	0.001622
W	RIVERSIDE	2025	LDT1	Aggregatec	Aggregatec	Aggregatec	90677.77	3305089	416785.6	0.078774	0	0.218579	0.001523	0	0.002021	0.002	0.01575	0.001656	0	0.002198
W	RIVERSIDE	2025	LDT2	Aggregatec	Aggregatec	Aggregatec	279129.6	10423308	1310100	0.051838	0	0.214963	0.001169	0	0.001544	0.002	0.01575	0.00127	0	0.001679
W	RIVERSIDE	2025	LHDT1	Aggregatec	Aggregatec	Aggregatec	40582.97	1333058	556907.1	1.039604	0.074638	0.261598	0.00832	0.00096	0.000185	0.00251	0.03276	0.008716	0.001004	0.000202
W	RIVERSIDE	2025	LHDT2	Aggregatec	Aggregatec	Aggregatec	11361.41	368862.8	150471.8	1.16119	0.107631	0.16257	0.011678	0.001413	9.25E-05	0.002718	0.03822	0.012216	0.001476	0.000101
W	RIVERSIDE	2025	MCY	Aggregatec	Aggregatec	Aggregatec	37914.47	267714.7	75828.94	1.110901	0	0.26219	0.001805	0	0.002555	0.001	0.00504	0.001933	0	0.002724
W	RIVERSIDE	2025	MDV	Aggregatec	Aggregatec	Aggregatec	218575.8	7714947	1005038	0.065881	0	0.270942	0.001211	0	0.001562	0.002	0.01575	0.001314	0	0.001699
W	RIVERSIDE	2025	MH	Aggregatec	Aggregatec	Aggregatec	7921.059	62186.51	792.3199	1.422966	0	0.231716	0.037642	0	0.000192	0.003314	0.05586	0.039373	0	0.000208
W	RIVERSIDE	2025	MHDT	Aggregatec	Aggregatec	Aggregatec	18510.35	1125257	202307	0.883252	0.380511	1.743483	0.00898	0.00036	8.5E-05	0.003	0.05586	0.00939	0.000376	9.24E-05
W	RIVERSIDE	2025	OBUS	Aggregatec	Aggregatec	Aggregatec	979.5941	53621.54	15462.63	0.793415	0.282855	0.763762	0.007867	9.69E-05	0.000186	0.003	0.05586	0.008238	0.000101	0.000202
W	RIVERSIDE	2025	SBUS	Aggregatec	Aggregatec	Aggregatec	1756.999	59641.76	16229.92	4.038056	3.070012	0.921915	0.02205	0.003409	4.45E-05	0.002649	0.3192	0.023059	0.003563	4.84E-05
W	RIVERSIDE	2025	UBUS	Aggregatec	Aggregatec	Aggregatec	487.5779	66878.6	1950.312	0.313271	0	0.167424	0.002533	0	0.00018	0.005478	0.037664	0.002666	0	0.000196
W	RIVERSIDE	2025	Aggregate	Aggregate	Aggregate	Aggregate	1606107	61875189	8207863	0.217912	0.325349	0.321866	0.003232	0.000231	0.001328	0.002499	0.018023	0.00342	0.000241	0.001444

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles

Year	NOX Exhau	TOG Evapo	TOG Exhau	CO Exhaust
2025	1.0018	1.0016	1.0016	1.0065

https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf

EMFAC2017 (v1.0.2) Emission Rate
Region Type: County
Region: RIVERSIDE
Calendar Year: 2025
Vehicle Classification: EMFAC2007
Units: miles/day for VMT, trips/da

Season	Region	Calendar Y	Vehicle Cat	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_RESTI
A	RIVERSIDE	2025	HHDT	0.035567	0.061002	1211.264	1329.373	0.018808	0.019451	0.027787	1.38E-07	0.190972	0.209172	1.3E-06	0.019321	0.565263	7.1E-07	3.95E-05	0.00018	6.77E-07
A	RIVERSIDE	2025	LDA	0.008	0.03675	234.14	0	48.28145	0.00154	0	0.037965	0.003721	0	0.021971	0.005501	0	0.159091	0.08161	0.186914	0.041993
A	RIVERSIDE	2025	LDT1	0.008	0.03675	281.4588	0	58.94436	0.004566	0	0.058597	0.006707	0	0.025867	0.019472	0	0.282444	0.193683	0.63247	0.110802
A	RIVERSIDE	2025	LDT2	0.008	0.03675	292.2711	0	61.49119	0.002764	0	0.053316	0.005296	0	0.026984	0.010766	0	0.236012	0.113589	0.387056	0.077739
A	RIVERSIDE	2025	LHDT1	0.01004	0.07644	604.4786	9.124067	9.855086	0.003607	0.004395	0.011788	0.041461	0.000877	0.021064	0.044465	0.018831	0.057931	0.0665	0.422533	0.001319
A	RIVERSIDE	2025	LHDT2	0.010872	0.08918	604.1473	14.3924	6.751203	0.002817	0.002838	0.006932	0.059181	0.001863	0.012794	0.047346	0.014885	0.033604	0.035567	0.193789	0.000738
A	RIVERSIDE	2025	MCY	0.004	0.01176	208.3016	0	59.4975	0.315698	0	0.237551	0.064793	0	0.014949	2.112246	0	1.793919	0.827806	1.657167	0.902993
A	RIVERSIDE	2025	MDV	0.008	0.03675	367.1508	0	76.81094	0.003431	0	0.064753	0.007395	0	0.02974	0.013786	0	0.305399	0.145399	0.45007	0.102893
A	RIVERSIDE	2025	MH	0.013258	0.13034	1383.904	0	16.97739	0.006939	0	0.021275	0.059311	0	0.025848	0.04526	0	0.082842	0.055312	1.125956	0.366431
A	RIVERSIDE	2025	MHDT	0.012	0.13034	913.0908	65.9539	8.119233	0.001072	0.00325	0.00796	0.1194	0.009545	0.006454	0.010202	0.016479	0.04099	0.017583	0.084993	0.000305
A	RIVERSIDE	2025	OBUS	0.012	0.13034	1276.06	70.21914	19.28923	0.003832	0.008453	0.021536	0.09187	0.00906	0.0192	0.022054	0.046516	0.110832	0.023641	0.265018	0.001125
A	RIVERSIDE	2025	SBUS	0.010594	0.7448	1069.651	357.8043	6.140398	0.005721	0.080294	0.007303	0.127306	0.045552	0.007259	0.082531	0.371699	0.042209	0.011357	0.069505	0.000823
A	RIVERSIDE	2025	UBUS	0.021913	0.087882	1591.708	0	17.32142	3.358383	0	0.019574	0.233712	0	0.018173	0.053416	0	0.076132	0.011739	0.060049	0.000812
A	RIVERSIDE	2025	Aggregate	0.009994	0.042053	355.4155	58.9691	48.00224	0.008389	0.001768	0.041816	0.021191	0.009188	0.022289	0.019566	0.02643	0.191571	0.099982	0.293054	0.060167
S	RIVERSIDE	2025	HHDT	0.035567	0.061002	1211.264	1312.382	0.01862	0.019451	0.02942	1.33E-07	0.19097	0.2065	1.26E-06	0.019323	0.598832	6.82E-07	4.38E-05	0.000182	1.38E-06
S	RIVERSIDE	2025	LDA	0.008	0.03675	254.4765	0	47.87055	0.001756	0	0.033472	0.003547	0	0.021445	0.006207	0	0.138984	0.093921	0.186333	0.078087
S	RIVERSIDE	2025	LDT1	0.008	0.03675	303.1205	0	58.4552	0.005162	0	0.051443	0.00638	0	0.02535	0.021954	0	0.246336	0.234659	0.634424	0.208706
S	RIVERSIDE	2025	LDT2	0.008	0.03675	312.6385	0	60.96593	0.003144	0	0.04703	0.005063	0	0.026452	0.01217	0	0.206475	0.132765	0.387877	0.142222
S	RIVERSIDE	2025	LHDT1	0.01004	0.07644	604.489	9.124067	9.785345	0.003656	0.004406	0.011375	0.041063	0.000878	0.020674	0.044705	0.018831	0.055734	0.077195	0.426644	0.002481
S	RIVERSIDE	2025	LHDT2	0.010872	0.08918	604.1505	14.3924	6.712834	0.002834	0.002844	0.006699	0.058911	0.001864	0.012602	0.047416	0.014885	0.032381	0.041571	0.196573	0.001377
S	RIVERSIDE	2025	MCY	0.004	0.01176	209.2873	0	57.89848	0.314511	0	0.21356	0.058686	0	0.014757	2.096701	0	1.603996	1.235126	1.65665	2.047142
S	RIVERSIDE	2025	MDV	0.008	0.03675	388.5815	0	76.18468	0.003908	0	0.057027	0.007108	0	0.029115	0.015594	0	0.266764	0.166596	0.450805	0.186344
S	RIVERSIDE	2025	MH	0.013258	0.13034	1383.936	0	16.77815	0.007081	0	0.020265	0.058043	0	0.025845	0.045968	0	0.079053	0.063539	1.128053	0.704303
S	RIVERSIDE	2025	MHDT	0.012	0.13034	913.0937	65.80371	8.050386	0.001087	0.003094	0.007703	0.119241	0.009489	0.006381	0.010266	0.01604	0.039504	0.02078	0.086713	0.00058
S	RIVERSIDE	2025	OBUS	0.012	0.13034	1276.076	69.45711	19.03561	0.003915	0.008527	0.020631	0.091106	0.008945	0.018957	0.022438	0.047605	0.105839	0.025868	0.266306	0.00212
S	RIVERSIDE	2025	SBUS	0.010594	0.7448	1069.664	365.6955	5.707641	0.005787	0.080407	0.006124	0.126597	0.046884	0.007022	0.082848	0.371633	0.035325	0.011874	0.064348	0.001506
S	RIVERSIDE	2025	UBUS	0.021913	0.087882	1591.711	0	16.95219	3.358415	0	0.01781	0.233234	0	0.017948	0.053506	0	0.069152	0.013773	0.058093	0.001628
S	RIVERSIDE	2025	Aggregate	0.009994	0.042053	373.5065	58.26865	47.58763	0.008656	0.001833	0.036988	0.020963	0.009077	0.021803	0.020477	0.027825	0.168229	0.118572	0.293443	0.114438
W	RIVERSIDE	2025	HHDT	0.035567	0.061002	1211.264	1352.837	0.018808	0.019451	0.025532	1.39E-07	0.190972	0.212863	1.29E-06	0.019321	0.518907	7.13E-07	4.35E-05	0.000192	7.06E-07
W	RIVERSIDE	2025	LDA	0.008	0.03675	228.5795	0	48.34795	0.001487	0	0.038809	0.003611	0	0.022117	0.005316	0	0.162984	0.086292	0.210913	0.035746
W	RIVERSIDE	2025	LDT1	0.008	0.03675	274.847	0	59.04821	0.004389	0	0.060172	0.006535	0	0.026103	0.018717	0	0.290069	0.210841	0.731136	0.093035
W	RIVERSIDE	2025	LDT2	0.008	0.03675	286.0482	0	61.60793	0.002651	0	0.054779	0.005159	0	0.027214	0.010336	0	0.242795	0.120266	0.444457	0.065387
W	RIVERSIDE	2025	LHDT1	0.01004	0.07644	604.4774	9.124067	9.859428	0.003601	0.004394	0.011811	0.041412	0.000877	0.021033	0.044435	0.018831	0.058037	0.074529	0.45277	0.001197
W	RIVERSIDE	2025	LHDT2	0.010872	0.08918	604.1464	14.3924	6.758567	0.002812	0.002836	0.006981	0.059165	0.001863	0.012823	0.047325	0.014885	0.033863	0.037916	0.208095	0.000617
W	RIVERSIDE	2025	MCY	0.004	0.01176	207.6189	0	59.46661	0.315071	0	0.238644	0.064581	0	0.015054	2.107968	0	1.80045	1.011498	1.892444	0.724038
W	RIVERSIDE	2025	MDV	0.008	0.03675	360.646	0	76.9356	0.003294	0	0.066413	0.007227	0	0.029983	0.013247	0	0.313511	0.15268	0.513884	0.087966
W	RIVERSIDE	2025	MH	0.013258	0.13034	1383.901	0	17.00063	0.006925	0	0.021389	0.059123	0	0.025913	0.045196	0	0.083253	0.063833	1.184832	0.34955
W	RIVERSIDE	2025	MHDT	0.012	0.13034	913.0886	66.15672	8.140839	0.00106	0.003477	0.008031	0.119421	0.009625	0.006498	0.010152	0.017097	0.041462	0.018111	0.091726	0.000241
W	RIVERSIDE	2025	OBUS	0.012	0.13034	1276.055	71.27148	19.33096	0.003806	0.00838	0.021699	0.091845	0.009226	0.019244	0.021937	0.045012	0.111603	0.024794	0.281439	0.001059
W	RIVERSIDE	2025	SBUS	0.010594	0.7448	1069.65	346.907	6.221782	0.005713	0.080271	0.007571	0.127252	0.043842	0.007361	0.082501	0.37179	0.043692	0.011534	0.084021	0.000789
W	RIVERSIDE	2025	UBUS	0.021913	0.087882	1591.708	0	17.29979	3.358386	0	0.019459	0.23359	0	0.018181	0.053424	0	0.07566	0.013238	0.071352	0.000852
W	RIVERSIDE	2025	Aggregate	0.009994	0.042053	350.2398	59.93628	48.07564	0.008312	0.001679	0.042771	0.021077	0.009341	0.022441	0.019266	0.024503	0.196072	0.107459	0.331787	0.050668

EMFAC2017 (v1.0.2) Emission Rate
Region Type: County
Region: RIVERSIDE
Calendar Year: 2025
Vehicle Classification: EMFAC2007
Units: miles/day for VMT, trips/da

Season	Region	Calendar Y	Vehicle Cat	ROG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
A	RIVERSIDE	2025	HHDT	1.11E-06	0.220305	8.359337	0.002314	0.01132	0.012516	1.86E-07
A	RIVERSIDE	2025	LDA	0.053293	0.516245	0	1.868572	0.002316	0	0.000478
A	RIVERSIDE	2025	LDT1	0.157243	1.040946	0	2.07577	0.002785	0	0.000583
A	RIVERSIDE	2025	LDT2	0.093821	0.736062	0	2.381562	0.002891	0	0.000609
A	RIVERSIDE	2025	LHDT1	0.002586	0.485499	0.168781	0.852299	0.005878	8.81E-05	9.75E-05
A	RIVERSIDE	2025	LHDT2	0.001388	0.374369	0.13064	0.488257	0.00582	0.000137	6.68E-05
A	RIVERSIDE	2025	MCY	1.679499	18.42192	0	8.620623	0.002061	0	0.000589
A	RIVERSIDE	2025	MDV	0.118367	0.813988	0	2.668016	0.003629	0	0.00076
A	RIVERSIDE	2025	MH	0.986653	0.798329	0	1.778899	0.013568	0	0.000168
A	RIVERSIDE	2025	MHDT	0.000579	0.139732	0.354086	0.877919	0.0087	0.000626	8.03E-05
A	RIVERSIDE	2025	OBUS	0.002585	0.463255	0.516243	2.296362	0.012389	0.00067	0.000191
A	RIVERSIDE	2025	SBUS	0.001691	0.467353	3.208776	0.936466	0.010242	0.003419	6.08E-05
A	RIVERSIDE	2025	UBUS	0.001331	26.11162	0	1.458421	0.004661	0	0.000171
A	RIVERSIDE	2025	Aggregate	0.079991	0.695524	0.379645	1.92334	0.003449	0.000556	0.000475
S	RIVERSIDE	2025	HHDT	2.08E-06	0.220398	8.249163	0.002195	0.01132	0.012356	1.84E-07
S	RIVERSIDE	2025	LDA	0.102931	0.629009	0	1.639847	0.002517	0	0.000474
S	RIVERSIDE	2025	LDT1	0.304724	1.25773	0	1.830219	0.003	0	0.000578
S	RIVERSIDE	2025	LDT2	0.181413	0.896463	0	2.097349	0.003093	0	0.000603
S	RIVERSIDE	2025	LHDT1	0.004814	0.491405	0.168781	0.812953	0.005878	8.81E-05	9.68E-05
S	RIVERSIDE	2025	LHDT2	0.002612	0.376189	0.13064	0.46664	0.00582	0.000137	6.64E-05
S	RIVERSIDE	2025	MCY	3.32148	19.07803	0	8.010254	0.002071	0	0.000573
S	RIVERSIDE	2025	MDV	0.227582	0.989585	0	2.337497	0.003841	0	0.000754
S	RIVERSIDE	2025	MH	1.794486	0.817063	0	1.661227	0.013568	0	0.000166
S	RIVERSIDE	2025	MHDT	0.001104	0.141366	0.30614	0.837632	0.0087	0.000624	7.97E-05
S	RIVERSIDE	2025	OBUS	0.004709	0.472431	0.512376	2.146928	0.012389	0.000662	0.000188
S	RIVERSIDE	2025	SBUS	0.003038	0.474379	3.175127	0.678025	0.010242	0.003493	5.65E-05
S	RIVERSIDE	2025	UBUS	0.002362	26.11342	0	1.240265	0.004661	0	0.000168
S	RIVERSIDE	2025	Aggregate	0.155147	0.819098	0.37378	1.699873	0.003628	0.000549	0.000471
W	RIVERSIDE	2025	HHDT	1.09E-06	0.220274	8.511483	0.002314	0.01132	0.012737	1.86E-07
W	RIVERSIDE	2025	LDA	0.042798	0.481092	0	1.890212	0.002261	0	0.000478
W	RIVERSIDE	2025	LDT1	0.129528	0.966337	0	2.111729	0.00272	0	0.000584
W	RIVERSIDE	2025	LDT2	0.072437	0.681249	0	2.425468	0.00283	0	0.00061
W	RIVERSIDE	2025	LHDT1	0.002246	0.484841	0.168781	0.854813	0.005878	8.81E-05	9.76E-05
W	RIVERSIDE	2025	LHDT2	0.001056	0.373852	0.13064	0.492354	0.00582	0.000137	6.69E-05
W	RIVERSIDE	2025	MCY	1.59186	18.00116	0	8.587366	0.002055	0	0.000588
W	RIVERSIDE	2025	MDV	0.090824	0.754569	0	2.712251	0.003565	0	0.000761
W	RIVERSIDE	2025	MH	0.947359	0.796792	0	1.792695	0.013568	0	0.000168
W	RIVERSIDE	2025	MHDT	0.000419	0.138479	0.42113	0.890551	0.0087	0.000627	8.06E-05
W	RIVERSIDE	2025	OBUS	0.002291	0.460681	0.521583	2.321057	0.012389	0.00068	0.000191
W	RIVERSIDE	2025	SBUS	0.001435	0.46675	3.255242	0.98467	0.010242	0.003316	6.16E-05
W	RIVERSIDE	2025	UBUS	0.001369	26.11178	0	1.445775	0.004661	0	0.000171
W	RIVERSIDE	2025	Aggregate	0.065692	0.654316	0.387765	1.948823	0.003398	0.000565	0.000476

OVTC Mobile Source Emissions

Building/L		Daily Trip		Trip			Grams per Trip Emission Factors						Grams per Mile Emission Factors						Daily Emissions (pounds per day)					
and Use	KSF	Gen Rate	Veh Type	Percent	ADT	ATL*	ROG	NOX	CO	SOX	PM10	PM2.5	ROG	NOX	CO	SOX	PM10	PM2.5	ROG	NOX	CO	SOX	PM10	PM2.5
BLDG1	707.00	2.12	Passenger	67.80%	1,016	40	0.5229	0.147013	1.868572	0.000478	0.001634	0.001503	0.005501	0.025606	0.516245	0.002316	0.045956	0.01886	1.66	2.62	50.45	0.21	4.12	1.69
			2-axle	11.17%	167	40	0.279971	0.269766	0.618897	0.000204	0.001577	0.001505	0.047346	1.172942	0.374369	0.00582	0.112267	0.052616	0.80	17.42	5.76	0.09	1.66	0.78
			3-axle	3.54%	53	40	0.160929	2.110644	1.232005	0.000706	0.000405	0.000384	0.010202	0.890756	0.139732	0.0087	0.15173	0.06784	0.07	4.41	0.80	0.04	0.71	0.32
			4+-axle	17.49%	262	40	0.565485	9.166609	8.361651	0.012516	0.002664	0.002548	0.019321	1.905162	0.220305	0.01132	0.123447	0.060751	0.77	49.34	9.93	0.27	2.86	1.41
BLDG2	522.20	2.12	Passenger	67.80%	751	40	0.5229	0.147013	1.868572	0.000478	0.001634	0.001503	0.005501	0.025606	0.516245	0.002316	0.045956	0.01886	1.23	1.94	37.26	0.15	3.04	1.25
			2-axle	11.17%	124	40	0.279971	0.269766	0.618897	0.000204	0.001577	0.001505	0.047346	1.172942	0.374369	0.00582	0.112267	0.052616	0.59	12.86	4.25	0.06	1.22	0.57
			3-axle	3.54%	39	40	0.160929	2.110644	1.232005	0.000706	0.000405	0.000384	0.010202	0.890756	0.139732	0.0087	0.15173	0.06784	0.05	3.26	0.59	0.03	0.52	0.23
			4+-axle	17.49%	194	40	0.565485	9.166609	8.361651	0.012516	0.002664	0.002548	0.019321	1.905162	0.220305	0.01132	0.123447	0.060751	0.57	36.44	7.33	0.20	2.11	1.04
BLDG3	400.47	4.63	Passenger	67.80%	1,257	40	0.5229	0.147013	1.868572	0.000478	0.001634	0.001503	0.005501	0.025606	0.516245	0.002316	0.045956	0.01886	2.06	3.25	62.41	0.26	5.10	2.10
			2-axle	5.38%	100	40	0.279971	0.269766	0.618897	0.000204	0.001577	0.001505	0.047346	1.172942	0.374369	0.00582	0.112267	0.052616	0.48	10.38	3.43	0.05	0.99	0.46
			3-axle	6.66%	123	40	0.160929	2.110644	1.232005	0.000706	0.000405	0.000384	0.010202	0.890756	0.139732	0.0087	0.15173	0.06784	0.15	10.27	1.86	0.09	1.65	0.74
			4+-axle	20.16%	374	40	0.565485	9.166609	8.361651	0.012516	0.002664	0.002548	0.019321	1.905162	0.220305	0.01132	0.123447	0.060751	1.10	70.36	14.15	0.38	4.07	2.00
BLDG4	620.31	4.63	Passenger	67.80%	1,947	40	0.5229	0.147013	1.868572	0.000478	0.001634	0.001503	0.005501	0.025606	0.516245	0.002316	0.045956	0.01886	3.19	5.03	96.67	0.40	7.90	3.25
			2-axle	5.38%	155	40	0.279971	0.269766	0.618897	0.000204	0.001577	0.001505	0.047346	1.172942	0.374369	0.00582	0.112267	0.052616	0.74	16.07	5.31	0.08	1.53	0.72
			3-axle	6.66%	191	40	0.160929	2.110644	1.232005	0.000706	0.000405	0.000384	0.010202	0.890756	0.139732	0.0087	0.15173	0.06784	0.24	15.92	2.88	0.15	2.56	1.14
			4+-axle	20.16%	579	40	0.565485	9.166609	8.361651	0.012516	0.002664	0.002548	0.019321	1.905162	0.220305	0.01132	0.123447	0.060751	1.71	108.98	21.92	0.59	6.31	3.11
Retail	751.8	33.97	Aggregate	100.00%	25,539	5.941879	0.751194	0.628028	2.302985	0.001031	0.001675	0.001548	0.019566	0.220545	0.695524	0.003449	0.055475	0.023761	48.84	109.14	362.35	1.21	18.65	8.04
																			64	**478**	**687**	**4**	**65**	**29**

Summerwind Ranch Mobile Source Emissions

Building/L		Daily Trip		Trip			Grams per Trip Emission Factors						Grams per Mile Emission Factors						Daily Emissions (pounds per day)					
and Use	KSF	Gen Rate	Veh Type	Percent	ADT	ATL*	ROG	NOX	CO	SOX	PM10	PM2.5	ROG	NOX	CO	SOX	PM10	PM2.5	ROG	NOX	CO	SOX	PM10	PM2.5
Business P:	1579	12.17	Aggregate	100.00%	19216.43	40	0.751194	0.628028	2.302985	0.001031	0.001675	0.001548	0.019566	0.220545	0.695524	0.003449	0.055475	0.023761	64.98	400.34	1,276.20	5.89	94.08	40.33
Retail	677.2	37.23	Aggregate	100.00%	25212.16	5.941879	0.751194	0.628028	2.302985	0.001031	0.001675	0.001548	0.019566	0.220545	0.695524	0.003449	0.055475	0.023761	48.22	107.75	357.72	1.20	18.41	7.93
Note: ATL for Retail uses set to CalEEMod default																			**113**	**508**	**1,634**	**7**	**112**	**48**

Attachment B

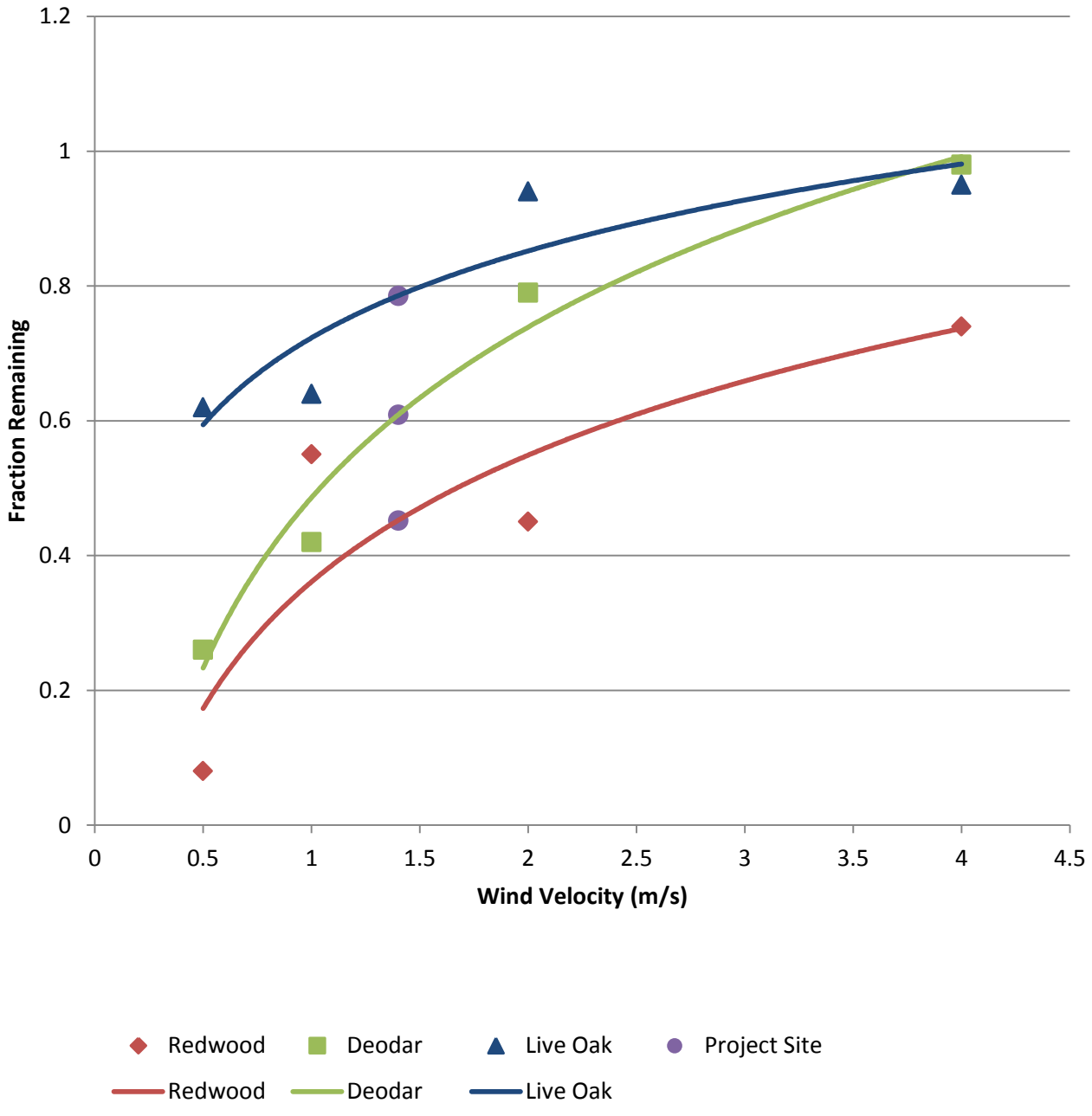
Health Risk Assessment Modeling Files

DPM Emissions

Site Characteristics															
							Primary Access			Secondary Access			Circulation		TRU
Building	KSF	Daily Trip Gen Rate	Veh Type	Trip Percent	ADT	Diesel ADT	ADT	Offsite ATL	Onsite ATL	ADT	Offsite ATL	Onsite ATL	Onsite ATL	TRU Population	Onsite Idle (min)
BLDG1	707.00	2.12	Passenger	67.80%	1,016	-	-	0.48	0.24	-	0.54	0.25		65	5
			2-axle	11.17%	167	119	60			60					
			3-axle	3.54%	53	47	23			23					
			4+-axle	17.49%	262	258	129			129					
BLDG2	522.20	2.12	Passenger	67.80%	751	-	-	0.48	0.23					48	5
			2-axle	11.17%	124	88	88								
			3-axle	3.54%	39	34	34								
			4+-axle	17.49%	194	191	191								
BLDG3	400.47	4.63	Passenger	67.80%	1,257	-	-	0.48	0.19	-	0.42	0.21		92	5
			2-axle	5.38%	100	71	36			36					
			3-axle	6.66%	123	108	54			54					
			4+-axle	20.16%	374	368	184			184					
BLDG4	620.31	4.63	Passenger	67.80%	1,947	-	-	0.24	0.20	-	0.54	0.15	0.23	143	5
			2-axle	5.38%	155	110	55			55					
			3-axle	6.66%	191	168	84			84					
			4+-axle	20.16%	579	570	285			285					

Emissions Estimates																		
	Onsite Idle Exhaust DPM					Onsite Running Exhaust DPM					Offsite Running Exhaust DPM					Circulation		TRU Idle Exhaust DPM	
Building	g/trip	Prime g/day	Prime g/day	Second g/day	Second g/day	g/mile	Prime g/day	Prime g/day	Second g/day	Second g/day	g/mile	Prime g/day	Prime g/day	Second g/day	Second g/day	g/day	g/day	g/min	g/day
BLDG1	########	0.00E+00	4.82E-01	0.00E+00	4.82E-01	0.00E+00	0.00E+00	1.12E+00	0.00E+00	1.19E+00	0.00E+00	0.00E+00	2.26E+00	0.00E+00	2.56E+00			2.39E-03	7.71E-01
	2.18E-03	1.30E-01		1.30E-01		1.67E-02	2.37E-01		2.52E-01		1.67E-02	4.76E-01		5.38E-01					
	4.02E-04	9.36E-03		9.36E-03		1.04E-02	5.77E-02		6.13E-02		1.04E-02	1.16E-01		1.31E-01					
	2.65E-03	3.42E-01		3.42E-01		2.70E-02	8.30E-01		8.81E-01		2.70E-02	1.67E+00		1.89E+00					
BLDG2	########	0.00E+00	7.12E-01			0.00E+00	0.00E+00	1.64E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.34E+00	0.00E+00	0.00E+00			2.39E-03	5.69E-01
	2.18E-03	1.92E-01				1.67E-02	3.45E-01		0.00E+00		1.67E-02	7.04E-01		0.00E+00					
	4.02E-04	1.38E-02				1.04E-02	8.41E-02		0.00E+00		1.04E-02	1.71E-01		0.00E+00					
	2.65E-03	5.05E-01				2.70E-02	1.21E+00		0.00E+00		2.70E-02	2.47E+00		0.00E+00					
BLDG3	########	0.00E+00	5.87E-01	0.00E+00	5.87E-01	0.00E+00	0.00E+00	1.15E+00	0.00E+00	1.29E+00	0.00E+00	0.00E+00	2.93E+00	0.00E+00	2.60E+00			2.39E-03	1.10E+00
	2.18E-03	7.75E-02		7.75E-02		1.67E-02	1.11E-01		1.25E-01		1.67E-02	2.84E-01		2.51E-01					
	4.02E-04	2.18E-02		2.18E-02		1.04E-02	1.06E-01		1.19E-01		1.04E-02	2.70E-01		2.39E-01					
	2.65E-03	4.88E-01		4.88E-01		2.70E-02	9.34E-01		1.05E+00		2.70E-02	2.38E+00		2.11E+00					
BLDG4	########	0.00E+00	9.10E-01	0.00E+00	9.10E-01	0.00E+00	0.00E+00	1.89E+00	0.00E+00	1.40E+00	0.00E+00	0.00E+00	2.27E+00	0.00E+00	5.15E+00	0.00E+00		2.39E-03	1.70E+00
	2.18E-03	1.20E-01		1.20E-01		1.67E-02	1.83E-01		1.35E-01		1.67E-02	2.20E-01		4.98E-01		1.04E-01	1.08E+00		
	4.02E-04	3.37E-02		3.37E-02		1.04E-02	1.74E-01		1.29E-01		1.04E-02	2.09E-01		4.74E-01		9.91E-02			
	2.65E-03	7.56E-01		7.56E-01		2.70E-02	1.53E+00		1.14E+00		2.70E-02	1.84E+00		4.18E+00		8.73E-01			

Chart 1 - PM Removal Ratios



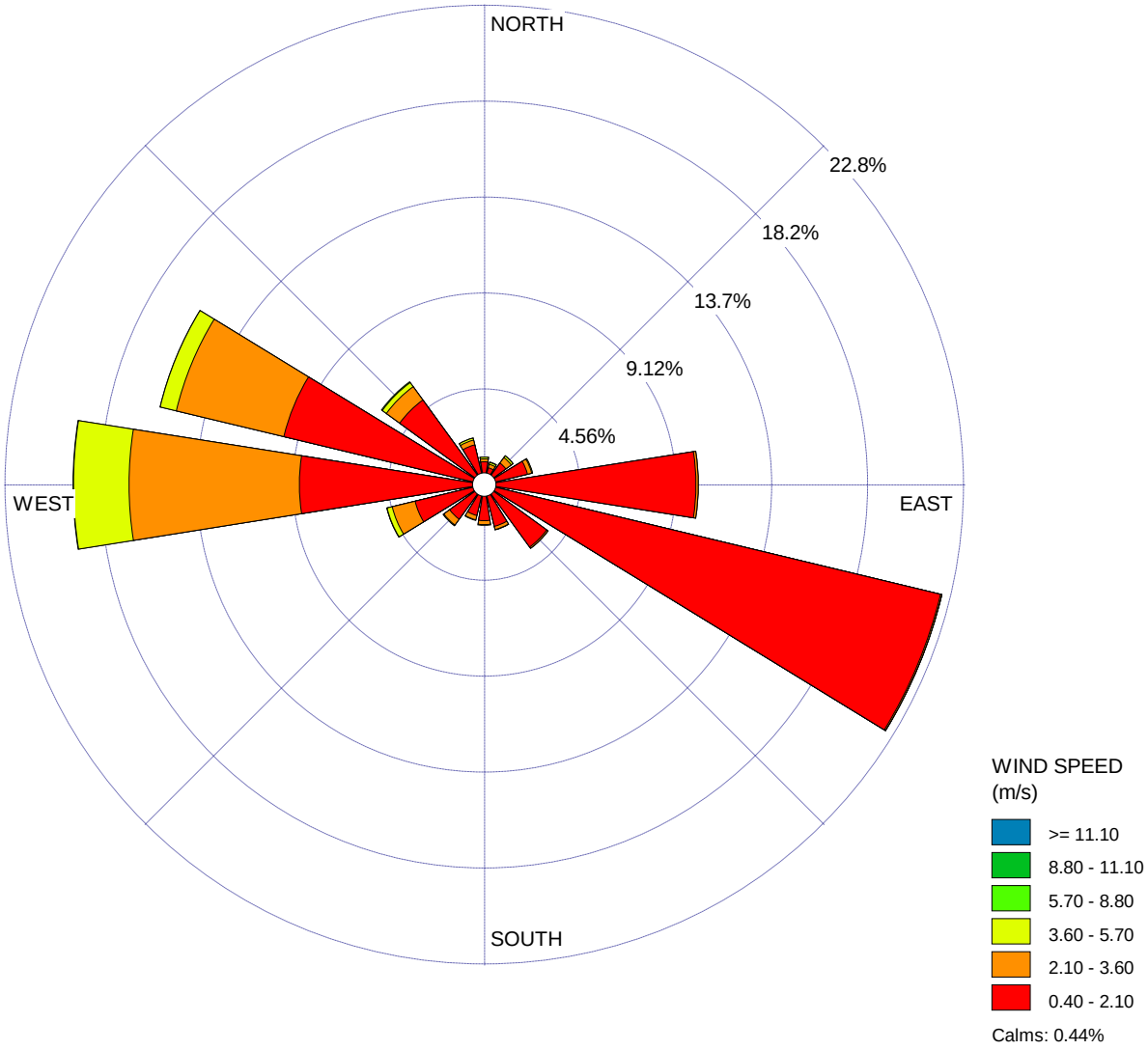
Source: Breath California 2008 - Figure 17

WIND ROSE PLOT:

Station #3171

DISPLAY:

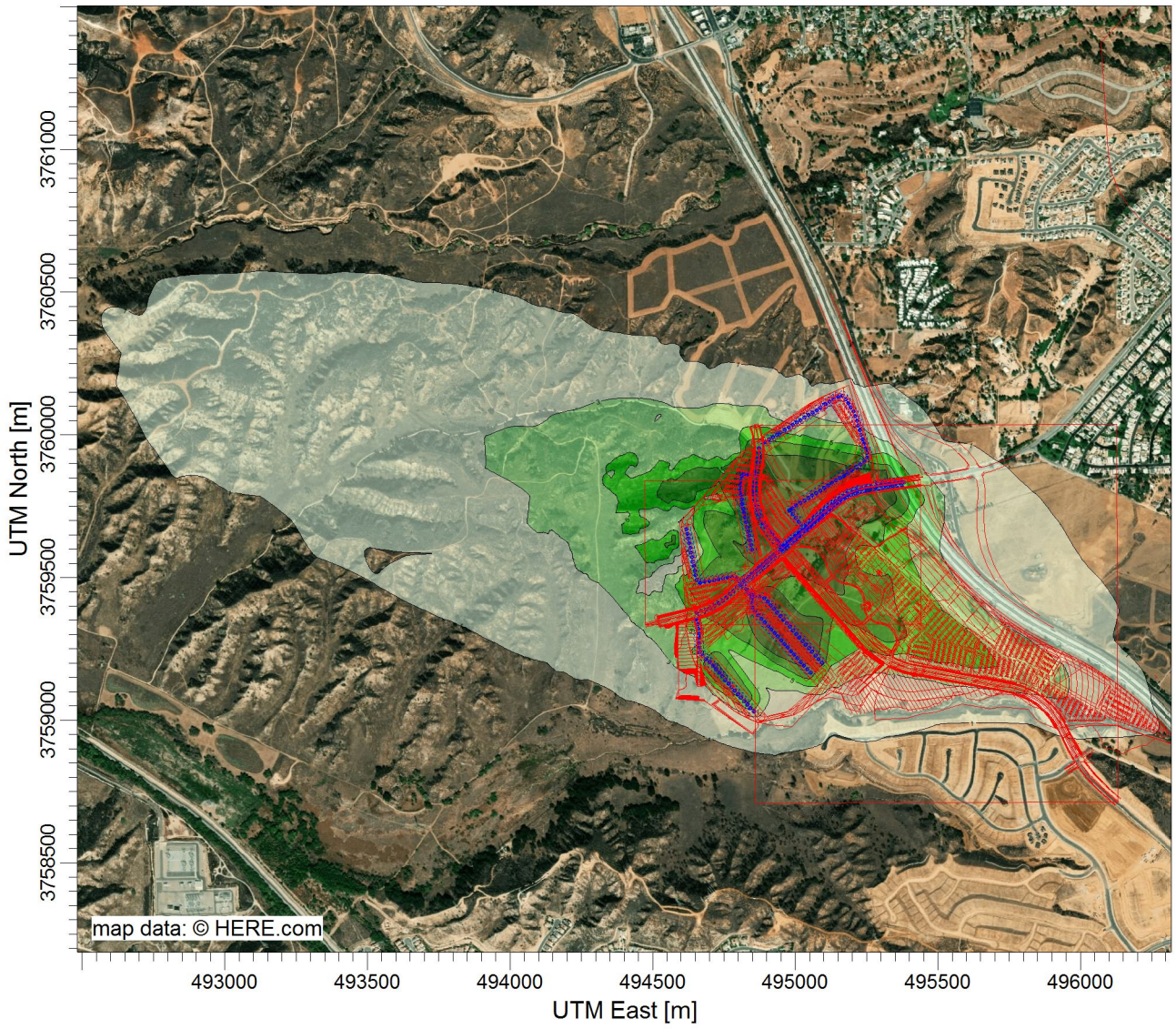
Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/2012 - 00:00** **End Date: 12/31/2016 - 23:59**	COMPANY NAME: **South Coast Air Quality Management District**	
		MODELER: **Melissa Sheffer**	
	CALM WINDS: **0.44%**	TOTAL COUNT: **43844 hrs.**	
	AVG. WIND SPEED: **1.40 m/s**	DATE: **5/25/2017**	PROJECT NO.:

PROJECT TITLE:

Oak Valley Town Center
Residential Cancer Risk



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 33.7 [ug/m^3] at (494957.74, 3759635.72)

1.0 3.0 5.0 7.0 10.0

COMMENTS:	SOURCES: **31**		
	RECEPTORS: **4288**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:24,127 0 0.5 km	
	MAX: **33.7 ug/m^3**		PROJECT NO.: **HVE-02**

Control Pathway

Dispersion Options

Titles

F:\Work\HVE 02 - Oak Valley Town Center\HRA\HVE02_AERMOD\HVE02_OVTC\

Dispersion Options

- [■] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Rural

Output Type

- [■] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

OTHER - DPM

Averaging Time Options

Hours

1	2	3	4	6	8	12	24
■	☐	☐	☐	☐	☐	☐	☐

- [ ] Month
- [■] Period
- [ ] Annual

Exponential Decay

Option not available

Terrain Height Options

- [ ] Flat
- [■] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [■] Yes
- [ ] No

Default Height = 1.50 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: HVE02_OVTC.err

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\MetData\RDLD_V9_ADJU\RDLD_v9.SFC

Format Type: Default AERMET format

Profile Met Data

Filename: ..\MetData\RDLD_V9_ADJU\RDLD_v9.PFL

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 481.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2012			
Upper Air		2012			

Data Period

Data Period to Process

Start Date: 1/1/2012 Start Hour: 1 End Date: 12/31/2016 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Source Pathway - Source Inputs

Point Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Gas Exit Temp. [K]	Gas Exit Velocity [m/s]	Stack Inside Diameter [m]
POINT	STCK1	494840.16 BLDG1 Generator	3759374.96	676.10	18.29	1.00000	0.00	0.00	0.15
POINT	STCK2	494910.16 BLDG2 Generator	3759436.34	679.00	18.29	1.00000	0.00	0.00	0.15
POINT	STCK3	494823.94 BLDG3 Generator	3759539.69	685.63	18.29	1.00000	0.00	0.00	0.15
POINT	STCK4	494984.71 BLDG4 Generator	3759766.50	675.73	18.29	1.00000	0.00	0.00	0.15

Source Pathway - Source Inputs

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	AREA1	494853.28	3759345.84	675.94	0.52	0.00022	279.02	16.58	48.41	
		BLDG1 East Idle								
AREA	AREA2	494853.28	3759345.84	675.94	0.52	0.00022	279.02	16.58	48.41	0.00
		BLDG1 TRU								
AREA	AREA3	494706.90	3759205.44	672.40	0.52	0.00023	234.72	18.43	48.46	
		BLDG1 West Idle								
AREA	AREA4	494931.14	3759403.68	678.82	0.52	0.00023	262.10	16.72	48.49	
		BLDG2 Idle								
AREA	AREA5	494931.14	3759403.68	678.82	0.52	0.00023	262.10	16.72	48.49	0.00
		BLDG2 TRU								
AREA	AREA6	494787.45	3759757.28	685.63	0.52	0.00031	176.88	18.28	77.76	
		BLDG3 East Idle								
AREA	AREA7	494787.45	3759757.28	685.63	0.52	0.00031	176.88	18.28	77.76	0.00
		BLDG3 TRU								
AREA	AREA8	494621.51	3759683.85	685.63	0.52	0.00033	167.12	18.10	77.62	
		BLDG3 West Idle								
AREA	AREA9	495020.71	3759777.01	675.73	0.52	0.00025	213.80	18.60	-32.58	
		BLDG4 South Idle								
AREA	AREA10	495020.71	3759777.01	675.73	0.52	0.00025	213.80	18.60	-32.58	0.00
		BLDG4 TRU								
AREA	AREA11	495099.61	3760089.63	675.73	0.52	0.00032	166.42	18.56	147.70	
		BLDG4 North Idle								

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (BLDG1 Onsite West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494651.60	3759356.78	677.82	3.50
			494659.86	3759329.74	674.89	3.50
			494661.36	3759318.47	674.14	3.50
			494663.62	3759237.33	668.31	3.50
			494702.68	3759200.52	672.73	3.50
			494856.70	3759026.22	668.86	3.50

Source Type: LINE VOLUME

Source: SLINE10 (BLDG2 Offsite)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495368.32	3759834.60	698.12	3.50
			495268.40	3759817.32	700.90	3.50
			495232.34	3759811.31	699.07	3.50
			495199.28	3759799.29	694.92	3.50
			495151.95	3759772.99	691.46	3.50
			494952.11	3759604.71	680.41	3.50
			494887.50	3759688.85	694.59	3.50
			494872.47	3759721.16	687.94	3.50
			494861.20	3759757.22	685.90	3.50
			494855.19	3759801.54	686.37	3.50
			494860.45	3759859.39	689.98	3.50

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: SLINE11 (BLDG3 Offsite South)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495372.08	3759834.60	698.27	3.50
			495266.90	3759818.82	700.83	3.50
			495226.33	3759809.06	697.83	3.50
			495185.76	3759793.28	694.17	3.50
			495159.46	3759779.00	691.60	3.50
			494810.12	3759477.74	690.15	3.50

Source Type: LINE VOLUME

Source: SLINE12 (BLDG4 Offsite West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495370.57	3759833.10	698.22	3.50
			495279.67	3759818.82	701.68	3.50
			495227.08	3759809.81	697.85	3.50
			495185.76	3759795.53	694.14	3.50
			494956.62	3759603.20	680.45	3.50
			494894.26	3759680.59	689.69	3.50
			494876.98	3759712.14	688.95	3.50
			494861.20	3759761.72	685.95	3.50
			494855.95	3759803.05	686.39	3.50
			494860.45	3759854.13	689.96	3.50
			494872.47	3759917.99	689.51	3.50
			494873.22	3759957.81	687.50	3.50

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: SLINE13 (BLDG3 Offsite East)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495368.32	3759834.60	698.12	3.50
			495268.40	3759817.32	700.90	3.50
			495232.34	3759811.31	699.07	3.50
			495199.28	3759799.29	694.92	3.50
			495151.95	3759772.99	691.46	3.50
			494952.11	3759604.71	680.41	3.50
			494887.50	3759688.85	694.59	3.50
			494872.47	3759721.16	687.94	3.50
			494861.20	3759757.22	685.90	3.50
			494855.19	3759801.54	686.37	3.50
			494860.45	3759859.39	689.98	3.50

Source Type: LINE VOLUME

Source: SLINE14 (BLDG1 Offsite East)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495368.32	3759834.60	698.12	3.50
			495268.40	3759817.32	700.90	3.50
			495232.34	3759811.31	699.07	3.50
			495199.28	3759799.29	694.92	3.50
			495151.95	3759772.99	691.46	3.50
			494952.11	3759604.71	680.41	3.50
			494887.50	3759688.85	694.59	3.50
			494872.47	3759721.16	687.94	3.50
			494861.20	3759757.22	685.90	3.50
			494855.19	3759801.54	686.37	3.50
			494860.45	3759859.39	689.98	3.50

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: SLINE15 (BLDG1 Offsite West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495368.32	3759833.85	698.12	3.50
			495281.17	3759819.57	702.08	3.50
			495227.83	3759809.06	697.88	3.50
			495197.78	3759798.54	694.88	3.50
			495158.71	3759776.75	691.61	3.50
			494812.37	3759479.99	691.49	3.50
			494742.47	3759416.01	691.32	3.50
			494706.71	3759396.22	681.76	3.50
			494650.51	3759375.14	681.67	3.50

Source Type: LINE VOLUME

Source: SLINE2 (BLDG1 Onsite East)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494827.40	3759461.21	687.57	3.50
			494846.93	3759436.42	680.53	3.50
			494850.69	3759395.85	676.77	3.50
			494855.19	3759384.58	674.76	3.50
			495056.54	3759163.70	676.23	3.50

Source Type: LINE VOLUME

Source: SLINE3 (BLDG2 Onsite)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494829.65	3759457.45	685.90	3.50
			494839.42	3759443.93	683.12	3.50
			494855.19	3759436.42	677.97	3.50
			494892.01	3759427.40	678.67	3.50
			495095.60	3759199.01	678.16	3.50

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: SLINE4 (BLDG3 Onsite West)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494797.35	3759495.02	685.63	3.50
			494785.32	3759504.03	685.63	3.50
			494662.87	3759481.50	685.63	3.50
			494654.60	3759488.26	685.63	3.50
			494617.04	3759673.82	685.63	3.50

Source Type: LINE VOLUME

Source: SLINE5 (BLDG3 Onsite East)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494840.17	3759860.89	685.63	3.50
			494812.37	3759863.90	685.63	3.50
			494805.61	3759812.06	685.63	3.50
			494810.12	3759787.27	685.63	3.50
			494811.62	3759766.23	685.63	3.50
			494848.43	3759594.19	685.63	3.50

Source Type: LINE VOLUME

Source: SLINE6 (BLDG4 Onsite North)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		494889.75	3759972.84	675.73	3.50
			495091.85	3760097.55	675.73	3.50

Source Pathway - Source Inputs

Source Type: LINE VOLUME

Source: SLINE7 (BLDG4 Onsite South)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495014.47	3759693.36	675.73	3.50
			494978.40	3759736.18	675.73	3.50
			495201.54	3759878.17	675.73	3.50

Source Type: LINE VOLUME

Source: SLINE8 (BLDG4 Onsite East)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495101.62	3760105.81	675.73	3.50
			495157.21	3760136.62	675.73	3.50
			495168.48	3760136.62	675.73	3.50
			495207.55	3760075.01	675.73	3.50
			495248.87	3759945.04	675.73	3.50
			495253.37	3759925.50	675.73	3.50
			495248.87	3759910.48	675.73	3.50
			495211.30	3759884.94	675.73	3.50

Source Type: LINE VOLUME

Source: SLINE9 (BLDG4 Offsite South)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.59	1.00000		495374.33	3759833.10	698.34	3.50
			495226.33	3759809.81	697.82	3.50
			495171.48	3759787.27	692.62	3.50
			495036.25	3759674.58	682.82	3.50

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	494652.85	3759352.67	677.94	3.50	0.04000	8.59		7.72	3.25
	L0000002	494657.70	3759336.80	675.61	3.50	0.04000	8.59		7.72	3.25
	L0000003	494661.08	3759320.59	674.30	3.50	0.04000	8.59		7.72	3.25
	L0000004	494661.76	3759304.01	673.16	3.50	0.04000	8.59		7.72	3.25
	L0000005	494662.23	3759287.42	672.01	3.50	0.04000	8.59		7.72	3.25
	L0000006	494662.69	3759270.82	670.85	3.50	0.04000	8.59		7.72	3.25
	L0000007	494663.15	3759254.22	669.64	3.50	0.04000	8.59		7.72	3.25
	L0000008	494663.61	3759237.62	668.34	3.50	0.04000	8.59		7.72	3.25
	L0000009	494675.49	3759226.14	669.33	3.50	0.04000	8.59		7.72	3.25
	L0000010	494687.57	3759214.76	671.86	3.50	0.04000	8.59		7.72	3.25
	L0000011	494699.66	3759203.37	672.97	3.50	0.04000	8.59		7.72	3.25
	L0000012	494710.92	3759191.19	673.32	3.50	0.04000	8.59		7.72	3.25
	L0000013	494721.92	3759178.75	672.89	3.50	0.04000	8.59		7.72	3.25
	L0000014	494732.91	3759166.31	672.65	3.50	0.04000	8.59		7.72	3.25
	L0000015	494743.91	3759153.86	671.54	3.50	0.04000	8.59		7.72	3.25
	L0000016	494754.90	3759141.42	670.81	3.50	0.04000	8.59		7.72	3.25
	L0000017	494765.90	3759128.98	668.99	3.50	0.04000	8.59		7.72	3.25
	L0000018	494776.89	3759116.53	667.57	3.50	0.04000	8.59		7.72	3.25
	L0000019	494787.88	3759104.09	667.91	3.50	0.04000	8.59		7.72	3.25
	L0000020	494798.88	3759091.65	668.02	3.50	0.04000	8.59		7.72	3.25
	L0000021	494809.87	3759079.21	668.08	3.50	0.04000	8.59		7.72	3.25
	L0000022	494820.87	3759066.76	668.26	3.50	0.04000	8.59		7.72	3.25
	L0000023	494831.86	3759054.32	668.54	3.50	0.04000	8.59		7.72	3.25
	L0000024	494842.86	3759041.88	668.74	3.50	0.04000	8.59		7.72	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000025	494853.85	3759029.44	668.93	3.50	0.04000	8.59		7.72	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000372	494830.05	3759457.84	686.05	3.50	0.04348	8.59		7.92	3.25
	L0000373	494840.60	3759444.46	682.65	3.50	0.04348	8.59		7.92	3.25
	L0000374	494847.56	3759429.65	680.25	3.50	0.04348	8.59		7.92	3.25
	L0000375	494849.13	3759412.69	678.70	3.50	0.04348	8.59		7.92	3.25
	L0000376	494850.73	3759395.74	677.71	3.50	0.04348	8.59		7.92	3.25
	L0000377	494858.57	3759380.87	674.89	3.50	0.04348	8.59		7.92	3.25
	L0000378	494870.05	3759368.28	677.76	3.50	0.04348	8.59		7.92	3.25
	L0000379	494881.52	3759355.70	677.08	3.50	0.04348	8.59		7.92	3.25
	L0000380	494893.00	3759343.11	676.78	3.50	0.04348	8.59		7.92	3.25
	L0000381	494904.47	3759330.52	676.71	3.50	0.04348	8.59		7.92	3.25
	L0000382	494915.95	3759317.93	676.59	3.50	0.04348	8.59		7.92	3.25
	L0000383	494927.42	3759305.34	676.75	3.50	0.04348	8.59		7.92	3.25
	L0000384	494938.90	3759292.76	676.80	3.50	0.04348	8.59		7.92	3.25
	L0000385	494950.37	3759280.17	676.80	3.50	0.04348	8.59		7.92	3.25
	L0000386	494961.85	3759267.58	676.65	3.50	0.04348	8.59		7.92	3.25
	L0000387	494973.32	3759254.99	676.43	3.50	0.04348	8.59		7.92	3.25
	L0000388	494984.80	3759242.40	676.22	3.50	0.04348	8.59		7.92	3.25
	L0000389	494996.27	3759229.82	676.30	3.50	0.04348	8.59		7.92	3.25
	L0000390	495007.75	3759217.23	676.29	3.50	0.04348	8.59		7.92	3.25
	L0000391	495019.22	3759204.64	676.29	3.50	0.04348	8.59		7.92	3.25
	L0000392	495030.69	3759192.05	676.36	3.50	0.04348	8.59		7.92	3.25
	L0000393	495042.17	3759179.46	676.40	3.50	0.04348	8.59		7.92	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000394	495053.64	3759166.88	676.32	3.50	0.04348	8.59		7.92	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000395	494832.17	3759453.97	685.06	3.50	0.04348	8.59		7.81	3.25
	L0000396	494843.40	3759442.04	681.93	3.50	0.04348	8.59		7.81	3.25
	L0000397	494858.81	3759435.53	677.00	3.50	0.04348	8.59		7.81	3.25
	L0000398	494875.12	3759431.54	677.08	3.50	0.04348	8.59		7.81	3.25
	L0000399	494891.43	3759427.54	678.72	3.50	0.04348	8.59		7.81	3.25
	L0000400	494902.79	3759415.31	678.71	3.50	0.04348	8.59		7.81	3.25
	L0000401	494913.96	3759402.78	678.65	3.50	0.04348	8.59		7.81	3.25
	L0000402	494925.14	3759390.24	678.59	3.50	0.04348	8.59		7.81	3.25
	L0000403	494936.31	3759377.71	678.64	3.50	0.04348	8.59		7.81	3.25
	L0000404	494947.48	3759365.17	678.93	3.50	0.04348	8.59		7.81	3.25
	L0000405	494958.66	3759352.64	678.58	3.50	0.04348	8.59		7.81	3.25
	L0000406	494969.83	3759340.10	677.97	3.50	0.04348	8.59		7.81	3.25
	L0000407	494981.01	3759327.57	677.98	3.50	0.04348	8.59		7.81	3.25
	L0000408	494992.18	3759315.03	677.89	3.50	0.04348	8.59		7.81	3.25
	L0000409	495003.35	3759302.50	677.91	3.50	0.04348	8.59		7.81	3.25
	L0000410	495014.53	3759289.96	678.04	3.50	0.04348	8.59		7.81	3.25
	L0000411	495025.70	3759277.43	678.06	3.50	0.04348	8.59		7.81	3.25
	L0000412	495036.88	3759264.89	678.05	3.50	0.04348	8.59		7.81	3.25
	L0000413	495048.05	3759252.36	678.06	3.50	0.04348	8.59		7.81	3.25
	L0000414	495059.22	3759239.82	678.11	3.50	0.04348	8.59		7.81	3.25
	L0000415	495070.40	3759227.29	678.22	3.50	0.04348	8.59		7.81	3.25
	L0000416	495081.57	3759214.75	678.30	3.50	0.04348	8.59		7.81	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000417	495092.75	3759202.22	678.28	3.50	0.04348	8.59		7.81	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE9	L0000559	495370.09	3759832.43	698.20	3.50	0.04348	8.59		7.96	3.25
	L0000560	495353.18	3759829.77	698.20	3.50	0.04348	8.59		7.96	3.25
	L0000561	495336.27	3759827.11	701.99	3.50	0.04348	8.59		7.96	3.25
	L0000562	495319.36	3759824.45	704.24	3.50	0.04348	8.59		7.96	3.25
	L0000563	495302.46	3759821.79	703.41	3.50	0.04348	8.59		7.96	3.25
	L0000564	495285.55	3759819.13	702.45	3.50	0.04348	8.59		7.96	3.25
	L0000565	495268.64	3759816.46	701.31	3.50	0.04348	8.59		7.96	3.25
	L0000566	495251.73	3759813.80	700.28	3.50	0.04348	8.59		7.96	3.25
	L0000567	495234.82	3759811.14	699.20	3.50	0.04348	8.59		7.96	3.25
	L0000568	495218.45	3759806.57	698.01	3.50	0.04348	8.59		7.96	3.25
	L0000569	495202.62	3759800.06	696.12	3.50	0.04348	8.59		7.96	3.25
	L0000570	495186.79	3759793.56	694.49	3.50	0.04348	8.59		7.96	3.25
	L0000571	495171.04	3759786.90	693.11	3.50	0.04348	8.59		7.96	3.25
	L0000572	495157.90	3759775.94	691.89	3.50	0.04348	8.59		7.96	3.25
	L0000573	495144.75	3759764.99	691.07	3.50	0.04348	8.59		7.96	3.25
	L0000574	495131.60	3759754.03	690.37	3.50	0.04348	8.59		7.96	3.25
	L0000575	495118.45	3759743.07	689.80	3.50	0.04348	8.59		7.96	3.25
	L0000576	495105.30	3759732.11	687.45	3.50	0.04348	8.59		7.96	3.25
	L0000577	495092.15	3759721.16	684.80	3.50	0.04348	8.59		7.96	3.25
	L0000578	495079.00	3759710.20	684.43	3.50	0.04348	8.59		7.96	3.25
	L0000579	495065.85	3759699.24	684.02	3.50	0.04348	8.59		7.96	3.25
	L0000580	495052.70	3759688.28	683.51	3.50	0.04348	8.59		7.96	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE9	L0000581	495039.55	3759677.33	682.96	3.50	0.04348	8.59		7.96	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE11	L0000611	495367.83	3759833.96	698.18	3.50	0.02439	8.59		7.84	3.25
	L0000612	495351.16	3759831.46	698.24	3.50	0.02439	8.59		7.84	3.25
	L0000613	495334.49	3759828.96	702.28	3.50	0.02439	8.59		7.84	3.25
	L0000614	495317.82	3759826.46	704.16	3.50	0.02439	8.59		7.84	3.25
	L0000615	495301.15	3759823.96	703.29	3.50	0.02439	8.59		7.84	3.25
	L0000616	495284.48	3759821.46	702.42	3.50	0.02439	8.59		7.84	3.25
	L0000617	495267.81	3759818.96	701.35	3.50	0.02439	8.59		7.84	3.25
	L0000618	495251.41	3759815.09	700.36	3.50	0.02439	8.59		7.84	3.25
	L0000619	495235.02	3759811.15	699.21	3.50	0.02439	8.59		7.84	3.25
	L0000620	495218.95	3759806.19	697.99	3.50	0.02439	8.59		7.84	3.25
	L0000621	495203.24	3759800.08	696.16	3.50	0.02439	8.59		7.84	3.25
	L0000622	495187.53	3759793.97	694.57	3.50	0.02439	8.59		7.84	3.25
	L0000623	495172.61	3759786.14	693.14	3.50	0.02439	8.59		7.84	3.25
	L0000624	495158.03	3759777.77	691.97	3.50	0.02439	8.59		7.84	3.25
	L0000625	495145.27	3759766.76	691.10	3.50	0.02439	8.59		7.84	3.25
	L0000626	495132.50	3759755.75	690.40	3.50	0.02439	8.59		7.84	3.25
	L0000627	495119.73	3759744.74	689.82	3.50	0.02439	8.59		7.84	3.25
	L0000628	495106.97	3759733.74	688.07	3.50	0.02439	8.59		7.84	3.25
	L0000629	495094.20	3759722.73	684.91	3.50	0.02439	8.59		7.84	3.25
	L0000630	495081.44	3759711.72	684.48	3.50	0.02439	8.59		7.84	3.25
	L0000631	495068.67	3759700.71	684.11	3.50	0.02439	8.59		7.84	3.25
	L0000632	495055.91	3759689.70	683.62	3.50	0.02439	8.59		7.84	3.25

Source Pathway - Source Inputs

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE11	L0000633	495043.14	3759678.69	683.09	3.50	0.02439	8.59		7.84	3.25
	L0000634	495030.38	3759667.69	682.57	3.50	0.02439	8.59		7.84	3.25
	L0000635	495017.61	3759656.68	682.06	3.50	0.02439	8.59		7.84	3.25
	L0000636	495004.85	3759645.67	681.54	3.50	0.02439	8.59		7.84	3.25
	L0000637	494992.08	3759634.66	681.11	3.50	0.02439	8.59		7.84	3.25
	L0000638	494979.32	3759623.65	680.86	3.50	0.02439	8.59		7.84	3.25
	L0000639	494966.55	3759612.64	680.67	3.50	0.02439	8.59		7.84	3.25
	L0000640	494953.79	3759601.64	680.36	3.50	0.02439	8.59		7.84	3.25
	L0000641	494941.02	3759590.63	680.14	3.50	0.02439	8.59		7.84	3.25
	L0000642	494928.26	3759579.62	680.07	3.50	0.02439	8.59		7.84	3.25
	L0000643	494915.49	3759568.61	680.09	3.50	0.02439	8.59		7.84	3.25
	L0000644	494902.73	3759557.60	680.48	3.50	0.02439	8.59		7.84	3.25
	L0000645	494889.96	3759546.59	683.61	3.50	0.02439	8.59		7.84	3.25
	L0000646	494877.20	3759535.59	683.11	3.50	0.02439	8.59		7.84	3.25
	L0000647	494864.43	3759524.58	682.00	3.50	0.02439	8.59		7.84	3.25
	L0000648	494851.67	3759513.57	682.90	3.50	0.02439	8.59		7.84	3.25
	L0000649	494838.90	3759502.56	687.44	3.50	0.02439	8.59		7.84	3.25
	L0000650	494826.14	3759491.55	692.70	3.50	0.02439	8.59		7.84	3.25
	L0000651	494813.37	3759480.54	691.51	3.50	0.02439	8.59		7.84	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE12	L0000652	495366.33	3759832.43	698.12	3.50	0.01923	8.59		7.89	3.25
	L0000653	495349.58	3759829.80	698.51	3.50	0.01923	8.59		7.89	3.25
	L0000654	495332.83	3759827.17	702.92	3.50	0.01923	8.59		7.89	3.25
	L0000655	495316.08	3759824.54	704.11	3.50	0.01923	8.59		7.89	3.25

Source Pathway - Source Inputs

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE12	L0000656	495299.33	3759821.91	703.24	3.50	0.01923	8.59		7.89	3.25
	L0000657	495282.57	3759819.28	702.28	3.50	0.01923	8.59		7.89	3.25
	L0000658	495265.85	3759816.45	701.11	3.50	0.01923	8.59		7.89	3.25
	L0000659	495249.14	3759813.59	700.14	3.50	0.01923	8.59		7.89	3.25
	L0000660	495232.43	3759810.72	699.06	3.50	0.01923	8.59		7.89	3.25
	L0000661	495216.18	3759806.04	697.82	3.50	0.01923	8.59		7.89	3.25
	L0000662	495200.15	3759800.51	695.99	3.50	0.01923	8.59		7.89	3.25
	L0000663	495184.44	3759794.42	694.39	3.50	0.01923	8.59		7.89	3.25
	L0000664	495171.45	3759783.52	692.90	3.50	0.01923	8.59		7.89	3.25
	L0000665	495158.46	3759772.62	691.77	3.50	0.01923	8.59		7.89	3.25
	L0000666	495145.47	3759761.72	691.11	3.50	0.01923	8.59		7.89	3.25
	L0000667	495132.48	3759750.82	690.47	3.50	0.01923	8.59		7.89	3.25
	L0000668	495119.50	3759739.91	689.89	3.50	0.01923	8.59		7.89	3.25
	L0000669	495106.51	3759729.01	687.14	3.50	0.01923	8.59		7.89	3.25
	L0000670	495093.52	3759718.11	684.82	3.50	0.01923	8.59		7.89	3.25
	L0000671	495080.53	3759707.21	684.49	3.50	0.01923	8.59		7.89	3.25
	L0000672	495067.54	3759696.31	684.05	3.50	0.01923	8.59		7.89	3.25
	L0000673	495054.56	3759685.41	683.52	3.50	0.01923	8.59		7.89	3.25
	L0000674	495041.57	3759674.51	682.98	3.50	0.01923	8.59		7.89	3.25
	L0000675	495028.58	3759663.60	682.46	3.50	0.01923	8.59		7.89	3.25
	L0000676	495015.59	3759652.70	681.94	3.50	0.01923	8.59		7.89	3.25
	L0000677	495002.60	3759641.80	681.44	3.50	0.01923	8.59		7.89	3.25
	L0000678	494989.61	3759630.90	681.03	3.50	0.01923	8.59		7.89	3.25
	L0000679	494976.63	3759620.00	680.84	3.50	0.01923	8.59		7.89	3.25
	L0000680	494963.64	3759609.10	680.59	3.50	0.01923	8.59		7.89	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE12	L0000681	494951.73	3759609.27	680.41	3.50	0.01923	8.59		7.89	3.25
	L0000682	494941.09	3759622.47	680.42	3.50	0.01923	8.59		7.89	3.25
	L0000683	494930.45	3759635.68	680.47	3.50	0.01923	8.59		7.89	3.25
	L0000684	494919.81	3759648.88	680.79	3.50	0.01923	8.59		7.89	3.25
	L0000685	494909.17	3759662.08	682.67	3.50	0.01923	8.59		7.89	3.25
	L0000686	494898.53	3759675.29	688.18	3.50	0.01923	8.59		7.89	3.25
	L0000687	494889.39	3759689.49	694.00	3.50	0.01923	8.59		7.89	3.25
	L0000688	494881.24	3759704.36	691.06	3.50	0.01923	8.59		7.89	3.25
	L0000689	494874.53	3759719.85	687.93	3.50	0.01923	8.59		7.89	3.25
	L0000690	494869.39	3759736.01	686.46	3.50	0.01923	8.59		7.89	3.25
	L0000691	494864.25	3759752.17	685.87	3.50	0.01923	8.59		7.89	3.25
	L0000692	494860.33	3759768.59	686.68	3.50	0.01923	8.59		7.89	3.25
	L0000693	494858.19	3759785.42	687.35	3.50	0.01923	8.59		7.89	3.25
	L0000694	494856.05	3759802.24	686.28	3.50	0.01923	8.59		7.89	3.25
	L0000695	494857.36	3759819.12	686.13	3.50	0.01923	8.59		7.89	3.25
	L0000696	494858.85	3759836.02	687.57	3.50	0.01923	8.59		7.89	3.25
	L0000697	494860.34	3759852.91	689.94	3.50	0.01923	8.59		7.89	3.25
	L0000698	494863.36	3759869.59	692.57	3.50	0.01923	8.59		7.89	3.25
	L0000699	494866.50	3759886.25	692.08	3.50	0.01923	8.59		7.89	3.25
	L0000700	494869.64	3759902.92	689.47	3.50	0.01923	8.59		7.89	3.25
	L0000701	494872.50	3759919.61	689.47	3.50	0.01923	8.59		7.89	3.25
	L0000702	494872.82	3759936.56	687.83	3.50	0.01923	8.59		7.89	3.25
	L0000703	494873.14	3759953.52	687.48	3.50	0.01923	8.59		7.89	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE13	L0000704	495364.09	3759833.87	698.09	3.50	0.02174	8.59		7.88	3.25
	L0000705	495347.40	3759830.98	698.70	3.50	0.02174	8.59		7.88	3.25
	L0000706	495330.71	3759828.09	703.24	3.50	0.02174	8.59		7.88	3.25
	L0000707	495314.01	3759825.21	703.98	3.50	0.02174	8.59		7.88	3.25
	L0000708	495297.32	3759822.32	703.12	3.50	0.02174	8.59		7.88	3.25
	L0000709	495280.63	3759819.43	702.16	3.50	0.02174	8.59		7.88	3.25
	L0000710	495263.93	3759816.58	701.02	3.50	0.02174	8.59		7.88	3.25
	L0000711	495247.23	3759813.79	700.09	3.50	0.02174	8.59		7.88	3.25
	L0000712	495230.60	3759810.68	698.97	3.50	0.02174	8.59		7.88	3.25
	L0000713	495214.68	3759804.89	697.58	3.50	0.02174	8.59		7.88	3.25
	L0000714	495198.80	3759799.02	695.77	3.50	0.02174	8.59		7.88	3.25
	L0000715	495183.99	3759790.79	694.16	3.50	0.02174	8.59		7.88	3.25
	L0000716	495169.18	3759782.57	692.73	3.50	0.02174	8.59		7.88	3.25
	L0000717	495154.38	3759774.34	691.67	3.50	0.02174	8.59		7.88	3.25
	L0000718	495141.12	3759763.87	690.86	3.50	0.02174	8.59		7.88	3.25
	L0000719	495128.16	3759752.96	690.17	3.50	0.02174	8.59		7.88	3.25
	L0000720	495115.20	3759742.05	689.70	3.50	0.02174	8.59		7.88	3.25
	L0000721	495102.25	3759731.14	686.65	3.50	0.02174	8.59		7.88	3.25
	L0000722	495089.29	3759720.23	684.67	3.50	0.02174	8.59		7.88	3.25
	L0000723	495076.33	3759709.31	684.35	3.50	0.02174	8.59		7.88	3.25
	L0000724	495063.37	3759698.40	683.94	3.50	0.02174	8.59		7.88	3.25
	L0000725	495050.42	3759687.49	683.42	3.50	0.02174	8.59		7.88	3.25
	L0000726	495037.46	3759676.58	682.89	3.50	0.02174	8.59		7.88	3.25
	L0000727	495024.50	3759665.67	682.37	3.50	0.02174	8.59		7.88	3.25
	L0000728	495011.55	3759654.76	681.85	3.50	0.02174	8.59		7.88	3.25

Source Pathway - Source Inputs

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SLINE13	L0000729	494998.59	3759643.85	681.37	3.50	0.02174	8.59		7.88	3.25
	L0000730	494985.63	3759632.94	680.96	3.50	0.02174	8.59		7.88	3.25
	L0000731	494972.68	3759622.02	680.78	3.50	0.02174	8.59		7.88	3.25
	L0000732	494959.72	3759611.11	680.55	3.50	0.02174	8.59		7.88	3.25
	L0000733	494947.85	3759610.25	680.37	3.50	0.02174	8.59		7.88	3.25
	L0000734	494937.53	3759623.69	680.40	3.50	0.02174	8.59		7.88	3.25
	L0000735	494927.22	3759637.12	680.49	3.50	0.02174	8.59		7.88	3.25
	L0000736	494916.90	3759650.56	680.94	3.50	0.02174	8.59		7.88	3.25
	L0000737	494906.59	3759663.99	683.44	3.50	0.02174	8.59		7.88	3.25
	L0000738	494896.27	3759677.43	689.64	3.50	0.02174	8.59		7.88	3.25
	L0000739	494886.43	3759691.15	694.15	3.50	0.02174	8.59		7.88	3.25
	L0000740	494879.28	3759706.51	690.39	3.50	0.02174	8.59		7.88	3.25
	L0000741	494872.24	3759721.91	687.77	3.50	0.02174	8.59		7.88	3.25
	L0000742	494867.19	3759738.08	686.42	3.50	0.02174	8.59		7.88	3.25
	L0000743	494862.13	3759754.25	686.03	3.50	0.02174	8.59		7.88	3.25
	L0000744	494859.35	3759770.92	686.99	3.50	0.02174	8.59		7.88	3.25
	L0000745	494857.07	3759787.70	687.40	3.50	0.02174	8.59		7.88	3.25
	L0000746	494855.46	3759804.50	686.29	3.50	0.02174	8.59		7.88	3.25
	L0000747	494857.00	3759821.37	686.19	3.50	0.02174	8.59		7.88	3.25
	L0000748	494858.53	3759838.24	687.84	3.50	0.02174	8.59		7.88	3.25
	L0000749	494860.06	3759855.11	690.19	3.50	0.02174	8.59		7.88	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE10	L0000796	495364.09	3759833.87	698.09	3.50	0.02174	8.59		7.88	3.25
	L0000797	495347.40	3759830.98	698.70	3.50	0.02174	8.59		7.88	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE10	L0000798	495330.71	3759828.09	703.24	3.50	0.02174	8.59		7.88	3.25
	L0000799	495314.01	3759825.21	703.98	3.50	0.02174	8.59		7.88	3.25
	L0000800	495297.32	3759822.32	703.12	3.50	0.02174	8.59		7.88	3.25
	L0000801	495280.63	3759819.43	702.16	3.50	0.02174	8.59		7.88	3.25
	L0000802	495263.93	3759816.58	701.02	3.50	0.02174	8.59		7.88	3.25
	L0000803	495247.23	3759813.79	700.09	3.50	0.02174	8.59		7.88	3.25
	L0000804	495230.60	3759810.68	698.97	3.50	0.02174	8.59		7.88	3.25
	L0000805	495214.68	3759804.89	697.58	3.50	0.02174	8.59		7.88	3.25
	L0000806	495198.80	3759799.02	695.77	3.50	0.02174	8.59		7.88	3.25
	L0000807	495183.99	3759790.79	694.16	3.50	0.02174	8.59		7.88	3.25
	L0000808	495169.18	3759782.57	692.73	3.50	0.02174	8.59		7.88	3.25
	L0000809	495154.38	3759774.34	691.67	3.50	0.02174	8.59		7.88	3.25
	L0000810	495141.12	3759763.87	690.86	3.50	0.02174	8.59		7.88	3.25
	L0000811	495128.16	3759752.96	690.17	3.50	0.02174	8.59		7.88	3.25
	L0000812	495115.20	3759742.05	689.70	3.50	0.02174	8.59		7.88	3.25
	L0000813	495102.25	3759731.14	686.65	3.50	0.02174	8.59		7.88	3.25
	L0000814	495089.29	3759720.23	684.67	3.50	0.02174	8.59		7.88	3.25
	L0000815	495076.33	3759709.31	684.35	3.50	0.02174	8.59		7.88	3.25
	L0000816	495063.37	3759698.40	683.94	3.50	0.02174	8.59		7.88	3.25
	L0000817	495050.42	3759687.49	683.42	3.50	0.02174	8.59		7.88	3.25
	L0000818	495037.46	3759676.58	682.89	3.50	0.02174	8.59		7.88	3.25
	L0000819	495024.50	3759665.67	682.37	3.50	0.02174	8.59		7.88	3.25
	L0000820	495011.55	3759654.76	681.85	3.50	0.02174	8.59		7.88	3.25
	L0000821	494998.59	3759643.85	681.37	3.50	0.02174	8.59		7.88	3.25
	L0000822	494985.63	3759632.94	680.96	3.50	0.02174	8.59		7.88	3.25

Source Pathway - Source Inputs

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SLINE10	L0000823	494972.68	3759622.02	680.78	3.50	0.02174	8.59		7.88	3.25
	L0000824	494959.72	3759611.11	680.55	3.50	0.02174	8.59		7.88	3.25
	L0000825	494947.85	3759610.25	680.37	3.50	0.02174	8.59		7.88	3.25
	L0000826	494937.53	3759623.69	680.40	3.50	0.02174	8.59		7.88	3.25
	L0000827	494927.22	3759637.12	680.49	3.50	0.02174	8.59		7.88	3.25
	L0000828	494916.90	3759650.56	680.94	3.50	0.02174	8.59		7.88	3.25
	L0000829	494906.59	3759663.99	683.44	3.50	0.02174	8.59		7.88	3.25
	L0000830	494896.27	3759677.43	689.64	3.50	0.02174	8.59		7.88	3.25
	L0000831	494886.43	3759691.15	694.15	3.50	0.02174	8.59		7.88	3.25
	L0000832	494879.28	3759706.51	690.39	3.50	0.02174	8.59		7.88	3.25
	L0000833	494872.24	3759721.91	687.77	3.50	0.02174	8.59		7.88	3.25
	L0000834	494867.19	3759738.08	686.42	3.50	0.02174	8.59		7.88	3.25
	L0000835	494862.13	3759754.25	686.03	3.50	0.02174	8.59		7.88	3.25
	L0000836	494859.35	3759770.92	686.99	3.50	0.02174	8.59		7.88	3.25
	L0000837	494857.07	3759787.70	687.40	3.50	0.02174	8.59		7.88	3.25
	L0000838	494855.46	3759804.50	686.29	3.50	0.02174	8.59		7.88	3.25
	L0000839	494857.00	3759821.37	686.19	3.50	0.02174	8.59		7.88	3.25
	L0000840	494858.53	3759838.24	687.84	3.50	0.02174	8.59		7.88	3.25
	L0000841	494860.06	3759855.11	690.19	3.50	0.02174	8.59		7.88	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE14	L0000888	495364.09	3759833.87	698.09	3.50	0.02174	8.59		7.88	3.25
	L0000889	495347.40	3759830.98	698.70	3.50	0.02174	8.59		7.88	3.25
	L0000890	495330.71	3759828.09	703.24	3.50	0.02174	8.59		7.88	3.25
	L0000891	495314.01	3759825.21	703.98	3.50	0.02174	8.59		7.88	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE14	L0000892	495297.32	3759822.32	703.12	3.50	0.02174	8.59		7.88	3.25
	L0000893	495280.63	3759819.43	702.16	3.50	0.02174	8.59		7.88	3.25
	L0000894	495263.93	3759816.58	701.02	3.50	0.02174	8.59		7.88	3.25
	L0000895	495247.23	3759813.79	700.09	3.50	0.02174	8.59		7.88	3.25
	L0000896	495230.60	3759810.68	698.97	3.50	0.02174	8.59		7.88	3.25
	L0000897	495214.68	3759804.89	697.58	3.50	0.02174	8.59		7.88	3.25
	L0000898	495198.80	3759799.02	695.77	3.50	0.02174	8.59		7.88	3.25
	L0000899	495183.99	3759790.79	694.16	3.50	0.02174	8.59		7.88	3.25
	L0000900	495169.18	3759782.57	692.73	3.50	0.02174	8.59		7.88	3.25
	L0000901	495154.38	3759774.34	691.67	3.50	0.02174	8.59		7.88	3.25
	L0000902	495141.12	3759763.87	690.86	3.50	0.02174	8.59		7.88	3.25
	L0000903	495128.16	3759752.96	690.17	3.50	0.02174	8.59		7.88	3.25
	L0000904	495115.20	3759742.05	689.70	3.50	0.02174	8.59		7.88	3.25
	L0000905	495102.25	3759731.14	686.65	3.50	0.02174	8.59		7.88	3.25
	L0000906	495089.29	3759720.23	684.67	3.50	0.02174	8.59		7.88	3.25
	L0000907	495076.33	3759709.31	684.35	3.50	0.02174	8.59		7.88	3.25
	L0000908	495063.37	3759698.40	683.94	3.50	0.02174	8.59		7.88	3.25
	L0000909	495050.42	3759687.49	683.42	3.50	0.02174	8.59		7.88	3.25
	L0000910	495037.46	3759676.58	682.89	3.50	0.02174	8.59		7.88	3.25
	L0000911	495024.50	3759665.67	682.37	3.50	0.02174	8.59		7.88	3.25
	L0000912	495011.55	3759654.76	681.85	3.50	0.02174	8.59		7.88	3.25
	L0000913	494998.59	3759643.85	681.37	3.50	0.02174	8.59		7.88	3.25
	L0000914	494985.63	3759632.94	680.96	3.50	0.02174	8.59		7.88	3.25
	L0000915	494972.68	3759622.02	680.78	3.50	0.02174	8.59		7.88	3.25
	L0000916	494959.72	3759611.11	680.55	3.50	0.02174	8.59		7.88	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE14	L0000917	494947.85	3759610.25	680.37	3.50	0.02174	8.59		7.88	3.25
	L0000918	494937.53	3759623.69	680.40	3.50	0.02174	8.59		7.88	3.25
	L0000919	494927.22	3759637.12	680.49	3.50	0.02174	8.59		7.88	3.25
	L0000920	494916.90	3759650.56	680.94	3.50	0.02174	8.59		7.88	3.25
	L0000921	494906.59	3759663.99	683.44	3.50	0.02174	8.59		7.88	3.25
	L0000922	494896.27	3759677.43	689.64	3.50	0.02174	8.59		7.88	3.25
	L0000923	494886.43	3759691.15	694.15	3.50	0.02174	8.59		7.88	3.25
	L0000924	494879.28	3759706.51	690.39	3.50	0.02174	8.59		7.88	3.25
	L0000925	494872.24	3759721.91	687.77	3.50	0.02174	8.59		7.88	3.25
	L0000926	494867.19	3759738.08	686.42	3.50	0.02174	8.59		7.88	3.25
	L0000927	494862.13	3759754.25	686.03	3.50	0.02174	8.59		7.88	3.25
	L0000928	494859.35	3759770.92	686.99	3.50	0.02174	8.59		7.88	3.25
	L0000929	494857.07	3759787.70	687.40	3.50	0.02174	8.59		7.88	3.25
	L0000930	494855.46	3759804.50	686.29	3.50	0.02174	8.59		7.88	3.25
	L0000931	494857.00	3759821.37	686.19	3.50	0.02174	8.59		7.88	3.25
	L0000932	494858.53	3759838.24	687.84	3.50	0.02174	8.59		7.88	3.25
	L0000933	494860.06	3759855.11	690.19	3.50	0.02174	8.59		7.88	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE15	L0000934	495364.08	3759833.15	698.08	3.50	0.01923	8.59		7.87	3.25
	L0000935	495347.39	3759830.42	698.75	3.50	0.01923	8.59		7.87	3.25
	L0000936	495330.71	3759827.69	703.28	3.50	0.01923	8.59		7.87	3.25
	L0000937	495314.02	3759824.95	703.99	3.50	0.01923	8.59		7.87	3.25
	L0000938	495297.33	3759822.22	703.12	3.50	0.01923	8.59		7.87	3.25
	L0000939	495280.65	3759819.47	702.16	3.50	0.01923	8.59		7.87	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE15	L0000940	495264.06	3759816.20	701.01	3.50	0.01923	8.59		7.87	3.25
	L0000941	495247.47	3759812.93	700.02	3.50	0.01923	8.59		7.87	3.25
	L0000942	495230.88	3759809.66	698.91	3.50	0.01923	8.59		7.87	3.25
	L0000943	495214.80	3759804.50	697.53	3.50	0.01923	8.59		7.87	3.25
	L0000944	495198.84	3759798.91	695.76	3.50	0.01923	8.59		7.87	3.25
	L0000945	495183.99	3759790.85	694.16	3.50	0.01923	8.59		7.87	3.25
	L0000946	495169.22	3759782.61	692.74	3.50	0.01923	8.59		7.87	3.25
	L0000947	495155.01	3759773.58	691.67	3.50	0.01923	8.59		7.87	3.25
	L0000948	495142.17	3759762.58	690.91	3.50	0.01923	8.59		7.87	3.25
	L0000949	495129.33	3759751.57	690.26	3.50	0.01923	8.59		7.87	3.25
	L0000950	495116.49	3759740.57	689.77	3.50	0.01923	8.59		7.87	3.25
	L0000951	495103.65	3759729.57	686.55	3.50	0.01923	8.59		7.87	3.25
	L0000952	495090.81	3759718.57	684.72	3.50	0.01923	8.59		7.87	3.25
	L0000953	495077.97	3759707.56	684.41	3.50	0.01923	8.59		7.87	3.25
	L0000954	495065.13	3759696.56	683.98	3.50	0.01923	8.59		7.87	3.25
	L0000955	495052.28	3759685.56	683.45	3.50	0.01923	8.59		7.87	3.25
	L0000956	495039.44	3759674.56	682.92	3.50	0.01923	8.59		7.87	3.25
	L0000957	495026.60	3759663.55	682.41	3.50	0.01923	8.59		7.87	3.25
	L0000958	495013.76	3759652.55	681.89	3.50	0.01923	8.59		7.87	3.25
	L0000959	495000.92	3759641.55	681.39	3.50	0.01923	8.59		7.87	3.25
	L0000960	494988.08	3759630.55	681.00	3.50	0.01923	8.59		7.87	3.25
	L0000961	494975.24	3759619.54	680.82	3.50	0.01923	8.59		7.87	3.25
	L0000962	494962.40	3759608.54	680.57	3.50	0.01923	8.59		7.87	3.25
	L0000963	494949.56	3759597.54	680.25	3.50	0.01923	8.59		7.87	3.25
	L0000964	494936.72	3759586.54	680.09	3.50	0.01923	8.59		7.87	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE15	L0000965	494923.88	3759575.53	680.01	3.50	0.01923	8.59		7.87	3.25
	L0000966	494911.03	3759564.53	680.12	3.50	0.01923	8.59		7.87	3.25
	L0000967	494898.19	3759553.53	680.92	3.50	0.01923	8.59		7.87	3.25
	L0000968	494885.35	3759542.53	684.03	3.50	0.01923	8.59		7.87	3.25
	L0000969	494872.51	3759531.52	682.41	3.50	0.01923	8.59		7.87	3.25
	L0000970	494859.67	3759520.52	682.05	3.50	0.01923	8.59		7.87	3.25
	L0000971	494846.83	3759509.52	684.00	3.50	0.01923	8.59		7.87	3.25
	L0000972	494833.99	3759498.52	689.85	3.50	0.01923	8.59		7.87	3.25
	L0000973	494821.15	3759487.51	693.49	3.50	0.01923	8.59		7.87	3.25
	L0000974	494808.42	3759476.38	690.55	3.50	0.01923	8.59		7.87	3.25
	L0000975	494795.95	3759464.96	689.90	3.50	0.01923	8.59		7.87	3.25
	L0000976	494783.48	3759453.55	691.91	3.50	0.01923	8.59		7.87	3.25
	L0000977	494771.00	3759442.13	693.71	3.50	0.01923	8.59		7.87	3.25
	L0000978	494758.53	3759430.71	693.64	3.50	0.01923	8.59		7.87	3.25
	L0000979	494746.06	3759419.29	693.06	3.50	0.01923	8.59		7.87	3.25
	L0000980	494731.93	3759410.18	691.66	3.50	0.01923	8.59		7.87	3.25
	L0000981	494717.13	3759401.99	686.71	3.50	0.01923	8.59		7.87	3.25
	L0000982	494702.03	3759394.46	680.58	3.50	0.01923	8.59		7.87	3.25
	L0000983	494686.20	3759388.53	678.95	3.50	0.01923	8.59		7.87	3.25
	L0000984	494670.37	3759382.59	679.53	3.50	0.01923	8.59		7.87	3.25
	L0000985	494654.53	3759376.65	681.32	3.50	0.01923	8.59		7.87	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000986	494793.91	3759497.60	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000987	494779.60	3759502.98	685.63	3.50	0.04762	8.59		7.70	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000988	494763.33	3759499.99	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000989	494747.05	3759496.99	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000990	494730.78	3759494.00	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000991	494714.50	3759491.00	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000992	494698.23	3759488.00	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000993	494681.96	3759485.01	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000994	494665.68	3759482.01	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000995	494654.00	3759491.21	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000996	494650.72	3759507.42	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000997	494647.44	3759523.64	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000998	494644.15	3759539.86	685.63	3.50	0.04762	8.59		7.70	3.25
	L0000999	494640.87	3759556.08	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001000	494637.59	3759572.30	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001001	494634.31	3759588.52	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001002	494631.02	3759604.74	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001003	494627.74	3759620.96	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001004	494624.46	3759637.18	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001005	494621.17	3759653.40	685.63	3.50	0.04762	8.59		7.70	3.25
	L0001006	494617.89	3759669.61	685.63	3.50	0.04762	8.59		7.70	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0001007	494835.90	3759861.36	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001008	494819.67	3759863.11	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001009	494811.21	3759854.99	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001010	494809.10	3759838.80	685.63	3.50	0.05263	8.59		7.59	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0001011	494806.98	3759822.61	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001012	494806.63	3759806.46	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001013	494809.55	3759790.40	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001014	494811.05	3759774.16	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001015	494813.37	3759758.04	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001016	494816.79	3759742.07	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001017	494820.21	3759726.11	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001018	494823.62	3759710.14	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001019	494827.04	3759694.18	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001020	494830.45	3759678.21	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001021	494833.87	3759662.25	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001022	494837.29	3759646.28	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001023	494840.70	3759630.32	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001024	494844.12	3759614.35	685.63	3.50	0.05263	8.59		7.59	3.25
	L0001025	494847.53	3759598.39	685.63	3.50	0.05263	8.59		7.59	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0001026	494893.41	3759975.09	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001027	494907.32	3759983.68	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001028	494921.23	3759992.26	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001029	494935.15	3760000.85	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001030	494949.06	3760009.43	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001031	494962.97	3760018.02	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001032	494976.89	3760026.61	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001033	494990.80	3760035.19	675.73	3.50	0.06667	8.59		7.60	3.25

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Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0001034	495004.71	3760043.78	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001035	495018.63	3760052.36	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001036	495032.54	3760060.95	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001037	495046.45	3760069.54	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001038	495060.37	3760078.12	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001039	495074.28	3760086.71	675.73	3.50	0.06667	8.59		7.60	3.25
	L0001040	495088.19	3760095.29	675.73	3.50	0.06667	8.59		7.60	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE7	L0001041	495011.70	3759696.64	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001042	495001.13	3759709.20	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001043	494990.55	3759721.75	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001044	494979.98	3759734.31	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001045	494990.19	3759743.68	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001046	495004.04	3759752.49	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001047	495017.89	3759761.31	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001048	495031.73	3759770.12	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001049	495045.58	3759778.93	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001050	495059.43	3759787.74	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001051	495073.28	3759796.56	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001052	495087.13	3759805.37	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001053	495100.97	3759814.18	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001054	495114.82	3759822.99	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001055	495128.67	3759831.81	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001056	495142.52	3759840.62	675.73	3.50	0.05000	8.59		7.63	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE7	L0001057	495156.37	3759849.43	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001058	495170.22	3759858.24	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001059	495184.06	3759867.06	675.73	3.50	0.05000	8.59		7.63	3.25
	L0001060	495197.91	3759875.87	675.73	3.50	0.05000	8.59		7.63	3.25

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE8	L0001061	495105.37	3760107.89	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001062	495120.23	3760116.13	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001063	495135.09	3760124.36	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001064	495149.95	3760132.59	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001065	495165.90	3760136.62	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001066	495176.19	3760124.45	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001067	495185.29	3760110.11	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001068	495194.39	3760095.76	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001069	495203.48	3760081.41	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001070	495210.40	3760066.05	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001071	495215.54	3760049.86	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001072	495220.69	3760033.67	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001073	495225.84	3760017.48	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001074	495230.98	3760001.29	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001075	495236.13	3759985.11	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001076	495241.28	3759968.92	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001077	495246.42	3759952.73	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001078	495250.87	3759936.35	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001079	495251.69	3759919.89	675.73	3.50	0.04545	8.59		7.90	3.25

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE8	L0001080	495242.95	3759906.45	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001081	495228.90	3759896.90	675.73	3.50	0.04545	8.59		7.90	3.25
	L0001082	495214.85	3759887.35	675.73	3.50	0.04545	8.59		7.90	3.25

Output Pathway

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: HVE02_OVTC.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
1	AREA1	1st	01H1G001.PLT
1	AREA10	1st	01H1G002.PLT
1	AREA11	1st	01H1G003.PLT
1	AREA2	1st	01H1G004.PLT
1	AREA3	1st	01H1G005.PLT
1	AREA4	1st	01H1G006.PLT
1	AREA5	1st	01H1G007.PLT
1	AREA6	1st	01H1G008.PLT
1	AREA7	1st	01H1G009.PLT
1	AREA8	1st	01H1G010.PLT
1	AREA9	1st	01H1G011.PLT
1	SLINE1	1st	01H1G012.PLT
1	SLINE10	1st	01H1G013.PLT
1	SLINE11	1st	01H1G014.PLT
1	SLINE12	1st	01H1G015.PLT
1	SLINE13	1st	01H1G016.PLT
1	SLINE14	1st	01H1G017.PLT
1	SLINE15	1st	01H1G018.PLT
1	SLINE2	1st	01H1G019.PLT
1	SLINE3	1st	01H1G020.PLT
1	SLINE4	1st	01H1G021.PLT
1	SLINE5	1st	01H1G022.PLT
1	SLINE6	1st	01H1G023.PLT
1	SLINE7	1st	01H1G024.PLT
1	SLINE8	1st	01H1G025.PLT
1	SLINE9	1st	01H1G026.PLT
1	STCK1	1st	01H1G027.PLT
1	STCK2	1st	01H1G028.PLT
1	STCK3	1st	01H1G029.PLT
1	STCK4	1st	01H1G030.PLT
Period	ALL	N/A	PE00GALL.PLT
Period	AREA1	N/A	PE00G001.PLT
Period	AREA10	N/A	PE00G002.PLT

Output Pathway

Period	AREA11	N/A	PE00G003.PLT
Period	AREA2	N/A	PE00G004.PLT
Period	AREA3	N/A	PE00G005.PLT
Period	AREA4	N/A	PE00G006.PLT
Period	AREA5	N/A	PE00G007.PLT
Period	AREA6	N/A	PE00G008.PLT
Period	AREA7	N/A	PE00G009.PLT
Period	AREA8	N/A	PE00G010.PLT
Period	AREA9	N/A	PE00G011.PLT
Period	SLINE1	N/A	PE00G012.PLT
Period	SLINE10	N/A	PE00G013.PLT
Period	SLINE11	N/A	PE00G014.PLT
Period	SLINE12	N/A	PE00G015.PLT
Period	SLINE13	N/A	PE00G016.PLT
Period	SLINE14	N/A	PE00G017.PLT
Period	SLINE15	N/A	PE00G018.PLT
Period	SLINE2	N/A	PE00G019.PLT
Period	SLINE3	N/A	PE00G020.PLT
Period	SLINE4	N/A	PE00G021.PLT
Period	SLINE5	N/A	PE00G022.PLT
Period	SLINE6	N/A	PE00G023.PLT
Period	SLINE7	N/A	PE00G024.PLT
Period	SLINE8	N/A	PE00G025.PLT
Period	SLINE9	N/A	PE00G026.PLT
Period	STCK1	N/A	PE00G027.PLT
Period	STCK2	N/A	PE00G028.PLT
Period	STCK3	N/A	PE00G029.PLT
Period	STCK4	N/A	PE00G030.PLT

Results Summary

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DPM - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	21722.87517	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	10/17/2014, 7
PERIOD		3260.47709	ug/m^3	495025.01	3759285.04	678.20	1.50	678.20	
1-HR	1ST	0.00000		492325.01	3757685.04	-99.00	-99.00	-99.00	
1-HR	1ST	0.00000		492325.01	3757685.04	-99.00	-99.00	-99.00	
PERIOD		0.01478		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		0.01286		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		63.95500		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		38.37300		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		55.60900		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		38.92600		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		33.36500		495029.83	3759695.99	-99.00	-99.00	-99.00	
PERIOD		44.48700		495029.83	3759695.99	-99.00	-99.00	-99.00	

DPM - Concentration - Source Group: AREA1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	9432.58979	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	10/17/2014, 7
PERIOD		981.92895	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	

Results Summary

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DPM - Concentration - Source Group: AREA10

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	3259.38292	ug/m^3	495025.01	3759785.04	685.70	1.50	685.70	8/21/2012, 6
PERIOD		281.32304	ug/m^3	495025.01	3759885.04	683.90	1.50	703.90	

DPM - Concentration - Source Group: AREA11

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	2442.03767	ug/m^3	494925.01	3759985.04	688.40	1.50	710.00	5/7/2012, 1
PERIOD		121.82164	ug/m^3	494896.70	3760031.96	691.35	1.50	710.01	

DPM - Concentration - Source Group: AREA2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	9432.58979	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	10/17/2014, 7
PERIOD		981.92895	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	

DPM - Concentration - Source Group: AREA3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	14548.08192	ug/m^3	494725.01	3759185.04	671.10	1.50	711.20	6/7/2015, 6
PERIOD		2477.96150	ug/m^3	494725.01	3759185.04	671.10	1.50	711.20	

Results Summary

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DPM - Concentration - Source Group: AREA4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	8161.93227	ug/m^3	495125.01	3759185.04	678.60	1.50	678.60	7/1/2016, 6
PERIOD		1255.11628	ug/m^3	495025.01	3759285.04	678.20	1.50	678.20	

DPM - Concentration - Source Group: AREA5

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	8161.93227	ug/m^3	495125.01	3759185.04	678.60	1.50	678.60	7/1/2016, 6
PERIOD		1255.11628	ug/m^3	495025.01	3759285.04	678.20	1.50	678.20	

DPM - Concentration - Source Group: AREA6

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	7083.82373	ug/m^3	494825.01	3759585.04	690.40	1.50	708.30	6/10/2013, 6
PERIOD		217.37516	ug/m^3	494725.01	3759685.04	696.80	1.50	712.50	

DPM - Concentration - Source Group: AREA7

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	7083.82373	ug/m^3	494825.01	3759585.04	690.40	1.50	708.30	6/10/2013, 6
PERIOD		217.37516	ug/m^3	494725.01	3759685.04	696.80	1.50	712.50	

Results Summary

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DPM - Concentration - Source Group: AREA8

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	4595.45803	ug/m^3	494725.01	3759485.04	685.10	1.50	712.50	7/1/2016, 6
PERIOD		376.82175	ug/m^3	494550.35	3759617.42	690.15	1.50	712.48	

DPM - Concentration - Source Group: AREA9

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	3259.38292	ug/m^3	495025.01	3759785.04	685.70	1.50	685.70	8/21/2012, 6
PERIOD		281.32304	ug/m^3	495025.01	3759885.04	683.90	1.50	703.90	

DPM - Concentration - Source Group: SLINE1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1304.10364	ug/m^3	494725.01	3759185.04	671.10	1.50	711.20	11/10/2012, 7
PERIOD		272.66517	ug/m^3	494632.70	3759245.42	668.82	1.50	711.16	

DPM - Concentration - Source Group: SLINE10

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	880.57231	ug/m^3	494932.73	3759592.47	680.11	1.50	710.48	3/23/2012, 5
PERIOD		264.87345	ug/m^3	494957.74	3759635.72	680.58	1.50	710.48	

Results Summary

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DPM - Concentration - Source Group: SLINE11

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1009.98819	ug/m^3	495188.79	3759813.50	695.61	1.50	702.64	3/29/2012, 7
PERIOD		235.51297	ug/m^3	495025.01	3759685.04	682.60	1.50	708.30	

DPM - Concentration - Source Group: SLINE12

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	767.09963	ug/m^3	494932.73	3759592.47	680.11	1.50	710.48	12/7/2012, 23
PERIOD		229.67350	ug/m^3	494957.74	3759635.72	680.58	1.50	710.48	

DPM - Concentration - Source Group: SLINE13

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	880.57231	ug/m^3	494932.73	3759592.47	680.11	1.50	710.48	3/23/2012, 5
PERIOD		264.87345	ug/m^3	494957.74	3759635.72	680.58	1.50	710.48	

DPM - Concentration - Source Group: SLINE14

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	880.57231	ug/m^3	494932.73	3759592.47	680.11	1.50	710.48	3/23/2012, 5
PERIOD		264.87345	ug/m^3	494957.74	3759635.72	680.58	1.50	710.48	

Results Summary

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DPM - Concentration - Source Group: SLINE15

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	802.03017	ug/m^3	495174.48	3759806.69	693.99	1.50	702.64	5/20/2012, 6
PERIOD		171.20219	ug/m^3	495174.48	3759806.69	693.99	1.50	702.64	

DPM - Concentration - Source Group: SLINE2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1543.13610	ug/m^3	495025.01	3759185.04	676.10	1.50	676.10	8/31/2012, 2
PERIOD		345.40203	ug/m^3	494925.01	3759285.04	676.50	1.50	692.20	

DPM - Concentration - Source Group: SLINE3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1372.76774	ug/m^3	495025.01	3759285.04	678.20	1.50	678.20	8/12/2012, 24
PERIOD		285.07156	ug/m^3	494925.01	3759385.04	678.50	1.50	706.70	

DPM - Concentration - Source Group: SLINE4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1144.08124	ug/m^3	494609.97	3759473.62	689.91	1.50	711.16	10/11/2012, 7
PERIOD		311.80206	ug/m^3	494725.01	3759485.04	685.10	1.50	712.50	

Results Summary

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DPM - Concentration - Source Group: SLINE5

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1555.91256	ug/m^3	494825.01	3759885.04	692.00	1.50	710.50	7/4/2012, 6
PERIOD		130.94393	ug/m^3	494825.01	3759785.04	693.50	1.50	710.50	

DPM - Concentration - Source Group: SLINE6

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1111.34474	ug/m^3	494925.01	3759985.04	688.40	1.50	710.00	7/9/2012, 6
PERIOD		96.64137	ug/m^3	494891.65	3759997.20	689.56	1.50	710.01	

DPM - Concentration - Source Group: SLINE7

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1256.37335	ug/m^3	494925.01	3759685.04	681.30	1.50	710.50	12/16/2012, 20
PERIOD		143.62389	ug/m^3	495025.01	3759785.04	685.70	1.50	685.70	

DPM - Concentration - Source Group: SLINE8

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	690.02441	ug/m^3	495234.71	3760019.85	693.06	1.50	776.76	9/5/2012, 7
PERIOD		53.32447	ug/m^3	495125.01	3759985.04	689.90	1.50	715.10	

Results Summary

F:\Work\HVE 02 - Oak Valley Town Center\HRA\HVE02_AERMOD\HVE02_OVTC\

DPM - Concentration - Source Group: SLINE9

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1417.66504	ug/m^3	495188.79	3759813.50	695.61	1.50	702.64	3/29/2012, 7
PERIOD		382.77911	ug/m^3	495188.79	3759813.50	695.61	1.50	702.64	

DPM - Concentration - Source Group: STCK1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	2264.72362	ug/m^3	494825.01	3759285.04	674.40	1.50	711.20	12/4/2014, 8
PERIOD		112.66343	ug/m^3	494725.01	3759385.04	687.10	1.50	711.20	

DPM - Concentration - Source Group: STCK2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1908.77656	ug/m^3	495025.01	3759385.04	679.90	1.50	679.90	9/24/2015, 7
PERIOD		202.07323	ug/m^3	495025.01	3759385.04	679.90	1.50	679.90	

DPM - Concentration - Source Group: STCK3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1416.05566	ug/m^3	494825.01	3759485.04	692.30	1.50	706.70	10/24/2015, 17
PERIOD		95.74073	ug/m^3	494550.35	3759617.42	690.15	1.50	712.48	

Results Summary

F:\Work\HVE 02 - Oak Valley Town Center\HRA\HVE02_AERMOD\HVE02_OVTC\

DPM - Concentration - Source Group: STCK4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1739.42812	ug/m^3	495011.81	3759680.92	682.16	1.50	708.35	10/31/2016, 3
PERIOD		46.68196	ug/m^3	494825.01	3759785.04	693.50	1.50	710.50	

HARP Project Summary Report 7/1/2020 7:16:53 PM

PROJECT INFORMATION
HARP Version: 19121
Project Name: HVE02_OVTC_YR1-7_MITIGATED
Project Output Directory: F:\Work\HVE 02 - Oak Valley Town Center\HRA\HARP2\HVE02_OVTC_YR1-7_MITIGATED
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:31
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
AREA1	0	0	9901	DieselExhPM	1	0.232544687	2.65E-05	1
AREA10	0	0	9901	DieselExhPM	1	0.822015751	9.38374E-05	1
AREA11	0	0	9901	DieselExhPM	1	0.439146336	5.01E-05	1
AREA2	0	0	9901	DieselExhPM	1	0.372173051	4.25E-05	1
AREA3	0	0	9901	DieselExhPM	1	0.232544687	2.65E-05	1
AREA4	0	0	9901	DieselExhPM	1	0.343521459	3.92E-05	1
AREA5	0	0	9901	DieselExhPM	1	0.274892174	3.14E-05	1
AREA6	0	0	9901	DieselExhPM	1	0.283511363	3.24E-05	1
AREA7	0	0	9901	DieselExhPM	1	0.530690538	6.05811E-05	1
AREA8	0	0	9901	DieselExhPM	1	0.283511363	3.24E-05	1
AREA9	0	0	9901	DieselExhPM	1	0.439146336	5.01E-05	1
PAREA1	0	0	9901	DieselExhPM	1	10.32	0.00117808219178082	1
SLINE1	0	0	9901	DieselExhPM	1	0.576621815	6.58244E-05	1
SLINE10	0	0	9901	DieselExhPM	1	1.613004064	0.000184133	1
SLINE11	0	0	9901	DieselExhPM	1	1.254675898	0.000143228	1
SLINE12	0	0	9901	DieselExhPM	1	2.485936467	0.000283783	1
SLINE13	0	0	9901	DieselExhPM	1	1.416563635	0.000161708	1
SLINE14	0	0	9901	DieselExhPM	1	1.091912939	0.000124648	1
SLINE15	0	0	9901	DieselExhPM	1	1.233695901	0.000140833	1
SLINE2	0	0	9901	DieselExhPM	1	0.542911181	6.19762E-05	1
SLINE3	0	0	9901	DieselExhPM	1	0.790913914	9.0287E-05	1
SLINE4	0	0	9901	DieselExhPM	1	0.624030368	7.12363E-05	1
SLINE5	0	0	9901	DieselExhPM	1	0.555857439	6.3454E-05	1
SLINE6	0	0	9901	DieselExhPM	1	0.675990281	7.71678E-05	1
SLINE7	0	0	9901	DieselExhPM	1	0.912231094	0.000104136	1
SLINE8	0	0	9901	DieselExhPM	1	0.519872104	5.93E-05	1

SLINE9	0	0	9901	DieselExhPM	1	1.096385078	0.000125158	1
STCK1	0	0	9901	DieselExhPM	1	0.216	0.018105	1
STCK2	0	0	9901	DieselExhPM	1	0.216	0.018105	1
STCK3	0	0	9901	DieselExhPM	1	0.216	0.018105	1
STCK4	0	0	9901	DieselExhPM	1	0.216	0.018105	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH18232
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
9901	DieselExhPM	1.1			5		

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list

Acute_Yr1-7_MAXHI_MITIGATED.plt
CancerRisk_Yr1-7_MITIGATED.plt
Chronic_Yr1-7_MAXHI_MITIGATED.plt

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)
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Res1-7_MIT_CancerRisk.csv
Res1-7_MIT_CancerRiskSumByRec.csv
Res1-7_MIT_GLCList.csv
Res1-7_MIT_HRAInput.hra
Res1-7_MIT_NCAcuteRisk.csv
Res1-7_MIT_NCAcuteRiskSumByRec.csv
Res1-7_MIT_NCChronicRisk.csv
Res1-7_MIT_NCChronicRiskSumByRec.csv
Res1-7_MIT_Output.txt
Res1-7_MIT_PathwayRec.csv
Res1-7_MIT_PolDB.csv

Spatial averaging files (\sa\)
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HARP Project Summary Report 7/1/2020 4:54:03 PM

PROJECT INFORMATION
HARP Version: 19121
Project Name: HVE02_OVTC_YR8-30_MITIGATED
Project Output Directory: F:\Work\HVE 02 - Oak Valley Town Center\HRA\HARP2\HVE02_OVTC_YR8-30_MITIGATED
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:31
No. of Background Pollutants:0

Emissions

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On-Site Station:

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AERMOD Output File:
AERMOD Error File:
Plotfile list

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CancerRisk_Yr8-30_MITIGATED.plt
Chronic_Yr8-30_MAXHI.plt

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)

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Res8-30CancerRisk.csv
Res8-30CancerRiskSumByRec.csv
Res8-30GLCList.csv
Res8-30HRAInput.hra
Res8-30NCAcuteRisk.csv
Res8-30NCAcuteRiskSumByRec.csv
Res8-30NCChronicRisk.csv
Res8-30NCChronicRiskSumByRec.csv
Res8-30Output.txt
Res8-30PathwayRec.csv
Res8-30PolDB.csv
Res8-30_CancerRiskSumByRecBySrc.csv

Spatial averaging files (\sa\)

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Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment C

Supplementary Noise Analysis

September 2020

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com

September 11, 2020 HVE-02

Mr. John Ohanian
Oak Valley Development Company
10410 Roberts Road
Calimesa, CA 92320

Subject: Supplementary Noise Analysis for the Oak Valley Town Center Project

Dear Mr. Ohanian:

HELIX Environmental Planning, Inc. (HELIX) is submitting this letter to provide an assessment of potential noise impacts associated with the Oak Valley Town Center (Project).

BACKGROUND

The Project site is located in the western portion of the City of Calimesa, west of Interstate 10 (I-10) and south of the Riverside-San Bernardino County line. The site is located northwest of the junction of I-10 and Highway 60. It extends from approximately a quarter mile northwest of the Cherry Valley Boulevard/I-10 crossing to approximately a quarter mile northwest of the Singleton Road/I-10 crossing.

Land uses for the Project site were originally planned in the Oak Valley Specific Plan 216/216A, which consisted of 6,405.5 acres within unincorporated Riverside County along the west side of I-10 to the San Timoteo Wash stretching from what is now the northerly boundary of the City of Calimesa to areas now in the City of Beaumont. The Oak Valley Specific Plan 216 was approved and the associated EIR was certified on October 6, 1988 by the Riverside County Board of Supervisors, since the City of Calimesa was not incorporated. Subsequently, Oak Valley Specific Plan Amendment 216A was approved by the Riverside County Board of Supervisors on May 22, 1990, for Phases 2-5 of the original Oak Valley Specific Plan 216. When the City of Calimesa (City) incorporated in December 1990, the City Council adopted those portions of the amended Oak Valley Specific Plan 216/216A and its accompanying EIR within the City limits and renamed it “Oak Valley SP1.” The Oak Valley SP-1 is referred to as the “Specific Plan” throughout this document.

Subsequently, an amendment to the Specific Plan was proposed as the Summerwind Ranch at Oak Valley Project in 2005 and included approximately 2,590 acres of the Specific Plan. The amendment was proposed in recognition of the environmental sensitivity of the site, and included a change in land uses resulting from the purchase of approximately 358 acres by the Riverside Land Conservancy and future

changes that could result should the option be exercised to convert the additional lands for open space purposes. The amended Specific Plan included a variety of residential uses and open space, as well as a Town Center, located in the east-central portion of the site, west of I-10 and around the proposed junction of Roberts Road and Singleton Road. Planned uses associated with the Oak Valley Town Center included 130.1 acres of business park and 129.5 acres of commercial uses, along with open space along a drainage (Figure 1, *Adopted Specific Plan Land Use Plan*). The potential for construction of a city hall, fire station, lift station, and detention basin within the area was contemplated. The Specific Plan included a requirement for construction of barriers along the interface of residential and commercial uses, as well as at the interface between residential areas and major roadways.

An EIR was prepared to address the Summerwind Ranch at Oak Valley Project and was certified by the City Council on April 18, 2005. The EIR concluded that the Summerwind Ranch at Oak Valley Project could result in potentially significant environmental impacts to noise, which would be reduced to below a level of significance with implementation of the mitigation measures specified in the EIR.

PROPOSED PROJECT MODIFICATIONS

The proposed Specific Plan Amendment includes approximately 244 acres of the Summerwind Ranch Specific Plan's Oak Valley Town Center, and excludes its two southernmost planning areas. Within the Project site, Roberts Road would be relocated further to the southwest, minor adjustments would be made to the alignment of Singleton Road, a formerly planned Street "F" would be omitted, and the locations of some land uses would be interchanged (Figure 2, *Proposed Specific Plan Land Use Plan*, and Figure 3, *Land Use Plan Comparison*). Specifically, business park uses would occur in areas previously planned for commercial use at the northeast and southwest quadrants of the Roberts Road/Singleton Road intersection, and commercial uses would primarily occur in areas previously planned for business park use along the I-10 frontage southeast of Singleton Road, at the southeast quadrant of the Roberts Road/Singleton Road intersection.

These revisions would decrease business park land uses within the Specific Plan Amendment area from 121.1 to 119.6 acres, a decrease of approximately 1.5 acres. Proposed uses would include approximately 2,250,000 square feet (SF) of business park uses (assumed for traffic modeling purposes to include 1,020,800 SF of high-cube parcel hub warehouse and 1,229,200 SF of high-cube cold storage warehouse), or approximately 671,000 SF more than the 1,579,000 SF assumed in the original environmental impact modeling for the approved Specific Plan. The proposed uses would include fulfillment centers that would operate 24 hours per day. The structures would have solar-ready roofs. Gas lines would be run to each building for potential future use and plug-in outlets would be provided for idling trucks.

Commercial land uses would increase from 86.0 to 88.7 acres, an increase of approximately 2.7 acres. This area would accommodate approximately 751,800 SF of commercial retail uses, or approximately 74,600 SF more than the 677,200 SF assumed in the original environmental impact modeling for the approved Specific Plan. The commercial land use area is planned as a lifestyle retail center with large and medium box retailers.

There would also be minor revisions to the northern boundary of the TC-10 open space, totaling a reduction of approximately 1.4 acres. Approximately 2.0 acres of open space would be added along the southeastern boundary of the site. Therefore, total open space would increase by 0.6 acre. Also, an

approximately 5-acre lake and adjacent linear park are proposed within the commercial site. The major roadway reconfigurations would reduce the amount of total land dedicated to road right-of-way by approximately 3.8 acres. This includes an approximately 2.4-acre update to the boundary at the Singleton Road crossing of I-10. The proposed land use changes are summarized in Table 1, *Land Use Summary*.

Table 1
LAND USE SUMMARY

Planning Area	Previously Approved Plan		Proposed Plan	
	Land Use	Acres	Land Use	Acres
TC-1	Commercial	25.5	Business Park	30.1
TC-2	Business Park	34.3	Business Park	25.4
TC-3	Business Park	41.4	Business Park	64.1
TC-4	Commercial	57.0	Commercial	85.6
TC-5[1]	Business Park	45.4	Commercial	3.1
TC-6[2]	Commercial	3.5	--	--
	Subtotal Business Park	121.1		119.6
TC-9A	Open Space	--	Open Space	2.0
	Subtotal Commercial	86.0		88.7
TC-10	Open Space	12.1	Open Space	10.7
	Subtotal Open Space	12.1		12.7
	Singleton/Roberts ROW	19.1	Singleton/Roberts ROW	20.9
	F Street ROW	8.0	--	--
	--	--	I-10 Freeway ROW	2.4
	Subtotal Major Roads	27.1		23.3
Total		**246.3**		**244.3**

[1] 2 acres within TC-1 are excluded from the Amendment No. 2 boundary.
[2] 45.4 acres of the Amendment No. 1 TC-5 PA are within the Amendment No. 2 boundary; 9.0 acres are outside of the Amendment No. 2 boundary.
[3] TC-6 was previously planned south of the Roberts Road/Street "F" intersection. As Street "F" is no longer proposed, this area has been absorbed into other planning areas.
ROW=right-of-way

A lift station and water quality pond would be located along the southwestern edge of the Project site. A lake would provide storage for reclaimed water as part of a comprehensive water management plan for the area. Additional improvements include funding for improvements to the Singleton Road freeway bridge crossing and freeway access ramps, as well as full construction of Singleton Road from I-10 to the western limits of the Project site and Roberts Road from the northern to the southern limit of the Project site. An equestrian trail previously planned along Singleton Road would be eliminated and an 8-foot paseo within the Singleton Road right-of-way would be provided from the I-10 freeway to Street "A". The Project proponent would be required to implement water, recycled water, and sewer infrastructure in accordance with current plans of the Yucaipa Valley Water District (YVWD), which differ from the plans at the time the Specific Plan was amended in 2005.

The proposed revisions would alter the development standards for business park uses. These modifications include: (1) limitations on maximum warehouse, storage facility, parcel hub and logistics facility size and setbacks from sensitive receptors would be modified to allow warehouse/logistic uses up to 707,000 SF, subject to the approval of a health risk assessment. Transport refrigeration units

would not be permitted to operate on the side of warehouses adjacent to residences. Similarly, if generators are installed, they would be located on the side of the warehouse that faces away from residences. The minimum required setback from adjacent sensitive receptor buildings would be decreased from 500 feet to 65 feet, depending on recommendations from a Health Risk Assessment; (2) parking standards for warehouse distribution uses that reduce the required number of spaces for buildings exceeding 40,000 SF; (3) revised parking space size reducing the parking space from 10' X 19' to 9' X 19'; (4) there would be no minimum distances between adjacent warehouse, storage facility, parcel hub or distribution facility uses, whether on the same or separate lots or parcels, however building setbacks shall comply with Table 18.30.040 of the City of Calimesa Development Code; and (5) modifications to allow pylon signs.

The proposed design guideline revisions include a requirement that large building facades of business park uses be articulated and screened. Large wall planes would be broken with offsets and the use of color and other ornamental architectural features to the extent possible. Business park buildings would be encouraged, but would not be required, to comply with the Specific Plan design guideline that no wall should have a blank, uninterrupted length exceeding 30 feet without including a change in texture, change in plane, window, lattice, tree, or equivalent element. They also would not be required to use heavy timber, rustic weathered wood, or brick or stone. Building entries and office areas are to be considered as opportunities to create building focal points with the use of varied massing, wall plane offsets, windows, colors, and other architectural features.

Planning area and perimeter street edges would be screened/softened with appropriate landscape material and/or decorative walls. Specifically, walls, berms, or a combination thereof would be used to provide visual screening and sound attenuation between business park buildings and adjacent residential development and trails within community open spaces (Figure 4, *Edge Condition Barriers*). The barrier between the business park and adjacent residences would be 14 to 15 feet tall, and may be comprised of a combination of berm, block wall, wooden fence, and/or glass.

In addition to the proposed revisions to the Specific Plan described above, the Project proposes a General Plan Amendment to reflect the revised Specific Plan and a Tentative Parcel Map application to establish future fee title lots to accommodate the commercial and business park land uses. At a future date, the applicant will submit a development plan review application(s) to approve the approximately 2.25 million SF of business park/warehouse uses. The Project would comply with applicable regulations and relevant mitigation measures included in the existing certified EIR.

Key Design Features

The following project design features, as described above, were incorporated into the noise modeling:

- Trucks would be equipped with ambient noise-sensing back-up alarms.
- Transport refrigeration units would not be permitted to operate on the side of warehouses adjacent to residences, specifically residences within the E-2 Townhomes, B-2 Garden Courts, B-3 Bungalows, and A-8 Cottages. Transport refrigeration units would also not be permitted to operate on the side of the warehouses adjacent to the B-1 Community Recreation or TC-10 Open Space.

- The I-10/Singleton Road interchange would be in place prior to the issuance of the first certificate of occupancy for business park uses.

- Based on the experience of the warehouse owner, trucks using transport refrigeration units are assumed to comprise 25 percent of four-axle trucks.

- In accordance with state air quality regulations, trucks equipped with transport refrigeration units are not allowed to idle more than five minutes. To comply with this regulation, loading docks would be equipped with plug-in outlets for idling trucks.

- Barriers consistent with the heights and locations shown on Figure 4 would be installed at the interface between residential and business park uses. All such barriers would be solid, and may be constructed of earth (berm) and/or masonry, with no cracks or gaps through or below the walls. Any seams or cracks would be filled or caulked.

- The need for a wall to attenuate noise impacts at the TC-1A Commercial Planning Area will be addressed as part of the Development Plan Review for the TC-1 Business Park, based on the land use and associated topography in the TC-1A Planning Area that are existing and planned at the time of that review.

ANALYSIS OF PROPOSED CHANGE IN LAND USES

The approach to this analysis is to determine potential new noise-related impacts from what was analyzed in the EIR based on changes in land use between the Summerwind Ranch project and the proposed Project.

Noise Analysis

Noise Terminology and Metrics

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Scope of Analysis

Impacts and mitigation identified in the EIR associated with short-term construction noise (EIR Impact N-1), I-10 freeway noise (EIR Impact N-3), and railroad noise (EIR Impact N-4) would be similar to those for the Project for the following reasons:

- Construction locations, activity types, and equipment would be generally consistent between the Summerwind Ranch project and the proposed Project. As such, construction-related noise

generation would be similar to what was analyzed in the EIR. The proposed Project would implement EIR mitigation measures MM N1-1 through MM N1-4 to reduce potential impacts to a less-than-significant level.

- Although the specific locations of commercial and business park land uses adjacent to I-10 would be revised, those land uses would continue to be located adjacent to I-10, within similar distances from I-10 as was analyzed in the EIR, and would therefore be exposed to similar noise levels. No new impacts would occur.

- The proposed Project site is not located in proximity to the railroad and no new rail-related noise impacts would occur.

This noise analysis therefore focuses on potential new off-site traffic noise impacts (EIR Impact N-2) and on-site traffic noise impacts (EIR Impact N-5) based on the change in vehicle trips from the Summerwind Ranch project and proposed Project conditions. It also considers potential noise impacts associated with trucking-related operations at warehouse distribution facilities proposed to occur within the Project's business park land uses in proximity to residential land uses.

Traffic Noise Analysis

This traffic noise analysis is based on the traffic noise discussion in the EIR (City of Calimesa 2005) and in the associated noise analysis (Urban Crossroads 2004), as well as the traffic assessment prepared for proposed Project (Urban Crossroads 2020). Roadways segments that were analyzed for traffic noise impacts in the EIR and that would be affected by the proposed Project are analyzed herein. These segments include:

- Roberts Road south of "C" Street
- Roberts Road south of Singleton Road
- Roberts Road north of Cherry Valley Boulevard
- Singleton Road west of Roberts Road
- Singleton Road east of Calimesa Boulevard

The EIR determined that off-site roadway noise impacts would be considered significant if the project would increase noise levels for a noise sensitive land use by 3 CNEL and if: (1) the existing noise levels already exceed the 65 CNEL residential standard or (2) the project increases noise levels from below the 65 CNEL residential standard to above 65 CNEL. For on-site traffic noise impacts, a significant impact would occur if traffic noise levels would exceed the City's noise-land use compatibility standards.

Summary of PEIR Impacts

Off-site Traffic Noise Impacts (EIR Impact N-2)

The EIR determined that traffic generated by buildout of the Summerwind Ranch project would increase noise levels by 3 CNEL or more on the following roadway segments (of the segments listed above that are relevant to this current analysis) where noise levels already exceed 65 CNEL or would exceed 65 CNEL with the Summerwind Ranch project:

- Roberts Road south of Singleton Road
- Singleton Road west of Roberts Road

These roads are future roads within the project site, and the noise impacts were determined to be limited to the project site. For all other segments, an increase of less than 3 CNEL is not considered significant in terms of an increase in ambient noise. The EIR determined that the Summerwind Ranch project's contribution to off-site roadway noise increases would not cause significant impacts to existing or future receptors.

On-site Traffic Noise Impacts (EIR Impact N-5)

The EIR determined that exterior noise levels for the residential lots located on the edge of the right-of-way of Roberts Road and Singleton Road would exceed the City's 65 CNEL standard for exterior residential areas. The EIR further determined that with construction of a minimum six-foot high sound attenuation wall, the exterior noise levels at the residential lots adjacent to these roads would remain below the City's 65 CNEL exterior noise level standard. Impacts were considered to be less than significant.

Analysis of Roadway Traffic Noise from Change in Land Uses

The change in land uses from what is proposed under the Summerwind Ranch project to what is proposed under the Project would result in changes to daily traffic volumes on the five roadway segments mentioned above. The daily traffic volumes associated with the General Plan buildout with Specific Plan scenario and the General Plan buildout with Project scenario are shown in Table 2, *Comparison of Average Daily Traffic Volumes.*

Table 2
COMPARISON OF AVERAGE DAILY TRAFFIC VOLUMES

Road Name/Segment	Average Daily Traffic (in thousands)		
	General Plan Buildout with Specific Plan	General Plan Buildout with Project	Delta
Roberts Road			
South of "C" Street	34.0	29.8	-4.2
South of Singleton Road	27.0	30.5	+3.5
North of Cherry Valley Boulevard	37.0	35.4	-1.6
Singleton Road			
West of Roberts Road	29.0	25.1	-3.9
East of Calimesa Boulevard	38.0	37.9	-0.1

Source: Urban Crossroads 2020
Note: The average daily traffic volumes for the General Plan buildout with Specific Plan scenario are presented as actual vehicles, while the average daily traffic volumes for the General Plan buildout with Project scenario are presented as passenger car equivalent (PCE); therefore, the average daily traffic volumes presented for the General Plan buildout with Project scenario are higher than what would actually occur and the difference between the two scenarios is conservative.

All roadway segments except for the segment of Roberts Road south of Singleton Road would have decreased average daily traffic volumes with the proposed Project when compared to the Summerwind Ranch project, and are therefore anticipated to have decreased traffic noise levels. This is because for a given mix of vehicles, roadway traffic noise is directly proportional to roadway traffic volume. In other words, for two scenarios consisting of similar vehicle mixes, the one with lower traffic volumes will have lower traffic noise levels.

Although the proposed Project would include warehouse distribution centers and would generate more truck traffic than the Summerwind Ranch project, the four roadways included in Table 2 that would experience a decrease in traffic volumes with the proposed Project are anticipated to accommodate a vehicle mix under the proposed Project similar to that under the Summerwind Ranch project. This is because the trucks associated with the warehouse distribution centers in Planning Areas TC-1, TC-2, and TC-3 would primarily utilize the I-10 freeway for regional distribution. Most trucks would exit the warehouse distribution sites and proceed towards I-10 via the segments of Roberts Road and Singleton Road between the warehouse distribution sites and I-10. These segments do not include the four segments of Roberts Road or Singleton Road that would see a decrease in traffic volumes with the proposed Project and do not include segments along which noise-sensitive receptors are located. As such, these four segments are not anticipated to accommodate a significant increase in truck traffic under the proposed Project compared to the Summerwind Ranch project.

The trip types and associated vehicle mixes along these four segments are anticipated to remain similar to what was previously analyzed in the EIR for the following additional reasons: (1) only approximately one-third of the trips generated by the warehouse distribution centers would be truck trips–-the other two-thirds would be passenger vehicle trips (Urban Crossroads 2020), which would be of a vehicle mix similar to the vehicle mix that would have been generated by the commercial and business park land uses previously analyzed; (2) the proposed Project, as with the Summerwind Ranch project, includes commercial uses, which generate high levels of traffic and would contribute a similar vehicle mix to that which was previously analyzed; and (3) the existing and proposed off-site land uses along the four segments that would see a decrease in traffic volumes are generally the same as they were when the EIR analysis was conducted (consisting primarily of residential uses), which would result in similar trip generation types along these segments (e.g., workers commuting between the Project site and the residential neighborhoods and residents traveling to the Project's commercial area).

As such, it is anticipated that the vehicle mix along these four segments would be similar to that which was analyzed in the EIR. With similar vehicle mixes and decreased traffic volumes, it can be concluded that traffic noise levels along these four segments would be lower than what was analyzed in the EIR, and no new impacts would occur. As such, these roadway segments are not further analyzed.

Off-site Traffic Noise Impacts

As discussed above, the only roadway segment that would have an increased average daily traffic volume, and therefore an increase in roadway traffic noise, with the proposed Project when compared to the Summerwind Ranch project would be Roberts Road south of Singleton Road. Because this segment is an internal roadway, the proposed Project would not cause in increase in traffic noise on off-site roadways as compared to the Summerwind Ranch project. Impacts to off-site roadways would remain less than significant.

On-site Traffic Noise Impacts

As discussed above, the only roadway segment that would have an increased average daily traffic volume, and therefore could increase roadway traffic noise, with the proposed Project when compared to the Summerwind Ranch project would be Roberts Road south of Singleton Road. No noise-sensitive residential land uses are located along this segment. As such, although traffic noise levels along this segment could increase when compared to noise levels analyzed in the EIR, an increase in noise would not result in the exposure of noise-sensitive residential land uses to exterior noise levels in excess of the City's 65 CNEL standard. Land uses proposed along this portion of Roberts Road that could experience an increase in traffic noise include commercial and business park (warehouse) uses. The EIR, which analyzed 27,000 vehicles per day along segment at build-out, did not identify potential traffic noise impacts to adjacent commercial and business park land uses, which are compatible with higher noise levels than are residential uses. The addition of 3,500 vehicles over the course of a day to this segment, primarily associated with the increased commercial retail in TC-4, would represent a minor increase in traffic levels. For reference, a general rule of thumb is that a doubling of traffic would cause a doubling in sound energy (a 3-dBA increase), which would be a perceptible increase. As such, the addition of 3,500 vehicles per day to a segment accommodating 27,000 vehicles would not result in a perceptible increase in ambient noise levels or cause an exceedance of noise compatibility standards associated with the commercial and business park (warehouse) land uses.

The portion of residential land uses along Roberts Road that was found in the EIR to be exposed to noise levels in excess of the 65 CNEL exterior standard is adjacent to the portion of Roberts Road north of Cherry Valley Boulevard that would see a decrease in traffic noise with the Project (as discussed above). Therefore, with the proposed Project, the residential land uses adjacent to Roberts Road would be exposed to noise levels lower than what was considered the EIR. With the minimum six-foot high sound attenuation wall required in the EIR, the exterior noise levels at the residential lots adjacent to this roadway segment would remain below the City's 65 CNEL exterior noise level standard.

Analysis of Warehouse-related Trucking Noise

As discussed above, as part of the proposed Project the minimum required setback of proposed warehouse distribution center buildings within business park land uses to adjacent buildings would be reduced from 500 feet to 65 feet. Land uses proposed immediately adjacent to TC-1 and TC-2, which are anticipated to be developed with warehouse distribution center buildings, include residential and recreational land uses. Similarly, residential land uses and open space with recreational uses would be located in proximity to the warehouse distribution center buildings proposed in TC-3. The warehouse distribution centers would involve the 24-hour operation of delivery trucks and associated loading docks. As such, a site-specific analysis of trucking-related noise generated at TC-1, TC-2, and TC-3 was conducted.

The City of Calimesa Municipal Code Chapter 8.15, *Noise Abatement and Control,* provides property noise level limits and states that the applicable limit between two different zoning districts is the arithmetic mean of the respective limits for the two districts. The business park land use (proposed to be developed with warehouse distribution centers) is considered a manufacturing zoning district with a nighttime (10:00 p.m. to 7:00 a.m.) noise limit of 50 dBA L_{EQ}. Residential land uses within the E-2 Townhomes, B-2 Garden Courts, and B-3 Bungalows have a nighttime noise level limit of 45 dBA L_{EQ} and share a common property line with TC-1 and TC-2. Therefore, a noise level limit of 47.5 dBA L_{EQ} is used

to determine significance of 24-hour trucking noise impacts at the residential properties adjacent to TC-1 and TC-2. Because TC-3 does not share a common property line with a residential zone, it is subject to the 50 dBA L_{EQ} nighttime manufacturing zoning district property line noise limit.

Assumptions and Methodology

Modeling of the exterior noise environment was accomplished using the Computer Aided Noise Abatement (CadnaA) version 2020. CadnaA is a model-based computer program developed by *DataKustik* for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project-related information, such as noise source data, barriers, structures, and topography to create a detailed model, and uses the most up-to-date calculation standards to predict outdoor noise impacts.

Trucking assumptions, including the number and type of trucks per building, are based on the Trip Generation and Circulation Context for the Oak Valley Town Center (Urban Crossroads 2020). This noise analysis considers the a.m. peak hour truck traffic, which is likely to occur before 7:00 a.m., and thus be subject to the 47.5-dBA L_{EQ} nighttime noise level limit in TC-1 and TC-2 and the 50-dBA L_{EQ} nighttime noise level limit in TC-3. TC-1 is estimated to generate a total of 134 truck trips during the a.m. peak hour, comprised of 22 two-axle truck trips, 28 three-axle truck trips and 84 four-axle truck trips. TC-2 is estimated to generate a total of 86 truck trips during the a.m. peak hour, comprised of 14 two-axle truck trips, 18 three-axle truck trips, and 54 four-axle truck trips. TC-3 is estimated to generate a total of 42 truck trips during the a.m. peak hour, comprised of 15 two-axle trucks, 5 three-axle trucks, and 22 four-axle trucks. Trucks would utilize loading docks, which would be located on both longer sides of the proposed buildings.

The noise model considers trucking-related noise associated with trucks entering the site driveways at 30 miles per hour (mph), traveling to the individual loading docks at less than 5 mph, backing into the loading docks with ambient noise-sensing backup alarms, and setting the parking brake. Trucks using transport refrigeration units (anticipated to be 25 percent of the four-axle trucks) would only operate on the side of the buildings away from the residences. In addition, such trucks are not allowed to idle more than five minutes, in accordance with state air quality regulations.

In the noise model, receivers were placed at first- and second-story building heights at the residential properties within the E-2 Townhomes to the north of TC-1, the B-2 Garden Courts to the north of TC-2, and the B-3 Bungalows to the west TC-2, and at various locations along the TC-3 property line adjacent to the proposed TC-10 Open Space and near the A-8 Cottages to the south. Noise attenuation barriers were included at the property lines at the top of the intervening slope between the business park and residential, recreational, and open space land uses.

A residential use currently exists in the TC-1A Commercial Planning Area, with TC-1A elevated up to 15 feet above the planned TC-1 Business Park use. The top of slope is on the property line. Given that this property is planned for commercial use, both the use and the relative elevations are anticipated to vary from their current condition in the future. Therefore, potential noise impacts to use in Planning Area TC-1A will be evaluated as part of the Development Plan Review process for Planning Area TC-1, based on conditions at the time of that review.

Results

With incorporation of a 15-foot tall wall extending west from Roberts Road for approximately 1,725 feet and a 14-foot tall wall along the remainder of the boundary between the residential land uses and business park land uses within TC-1 and TC-2, modeled first-story noise levels at the residential properties would range from 33.0 dBA L_{EQ} to 42.0 dBA L_{EQ}. Modeled second-story noise levels at the residential properties would range from 38.5 dBA L_{EQ} to 47.5 dBA L_{EQ}.[1] Noise levels would not exceed the applicable 47.5-dBA L_{EQ} noise level limit and would be in compliance with the City's Municipal Code.

With the incorporation of a 10-foot tall wall extending for approximately 450 feet along the southern border of TC-3 and a 5-foot wall extending along the remainder of the boundary between open space uses and business park land uses within TC-3, modeled noise levels in the adjacent open space would range from 37.0 dBA L_{EQ} to 44.9 dBA L_{EQ}. Noise levels would not exceed the applicable 50-dBA L_{EQ} noise level limit and would be in compliance with the City's Municipal Code.

The A-8 Cottages are the only existing residential use adjacent to the site, with some units located within approximately 250 horizontal feet of proposed TC-3, at elevations approximately 30 feet above the proposed industrial uses. Noise is generally attenuated by approximately 6 dB with each doubling of distance. Due to the distance, noise levels at the homes, even in the absence of the proposed barriers, would be approximately 40 to 46 dBA L_{EQ}, which is within the established thresholds.

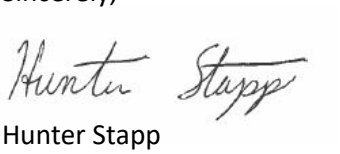
Therefore, with implementation of the project design features, warehouse trucking noise levels would be below City standards, and no new significant impact would occur.

[1] Noise levels rounded to the nearest 0.5 dBA.

CONCLUSION

The proposed Project changes would not result in new significant noise-related impacts or a substantial increase in the severity of previously identified significant impacts per CEQA using the methodology and approach from the EIR.

Sincerely,



Hunter Stapp
Noise Analyst

cc: Charles Terry, Principal Noise Specialist, HELIX Environmental Planning, Inc.

Figures:

Figure 1, Adopted Specific Plan Land Use Plan
Figure 2, Proposed Specific Plan Land Use Plan
Figure 3, Land Use Plan Comparison
Figure 4, Edge Condition Barriers

Attachments:

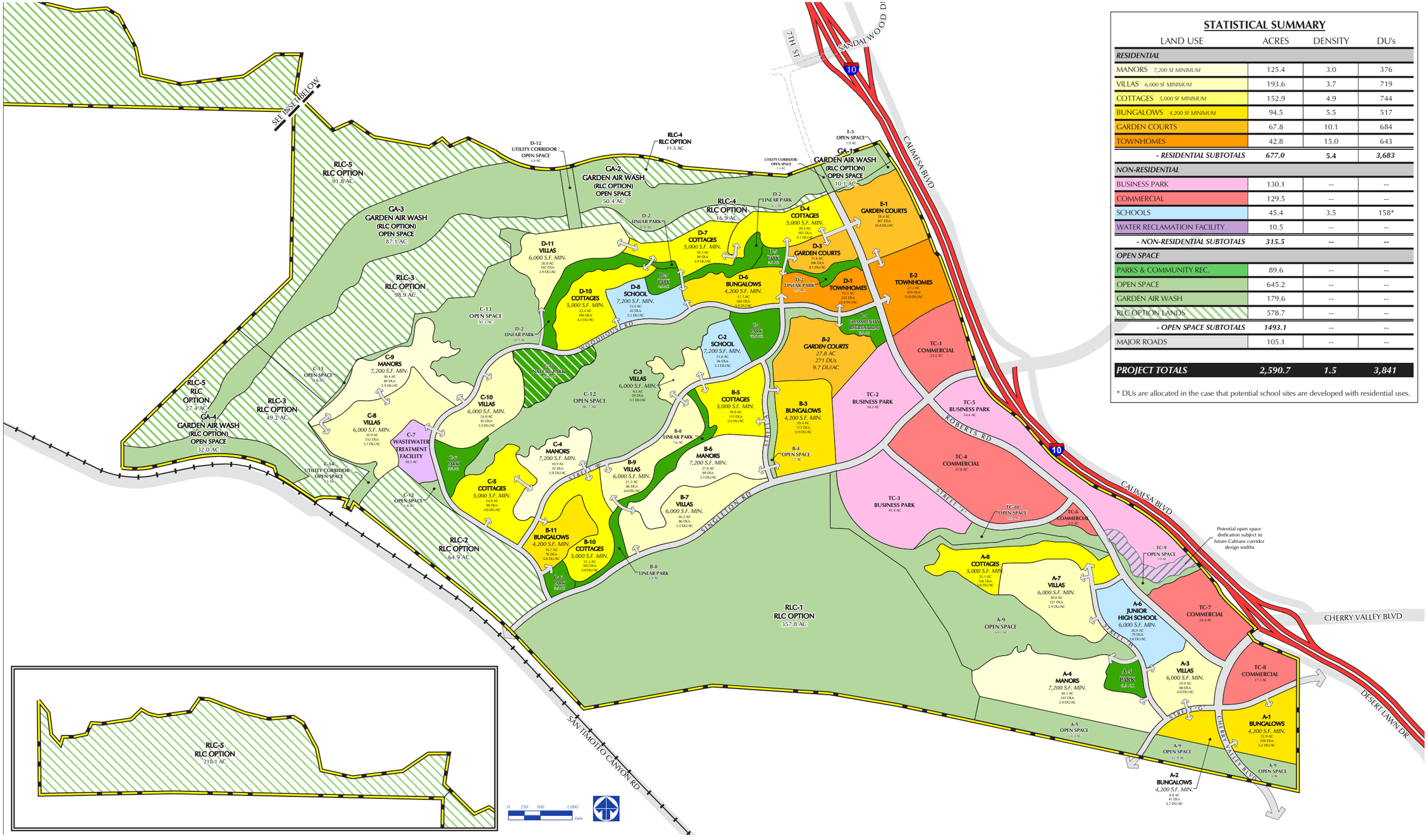
Attachment 1, CADNA Output Files

REFERENCES

City of Calimesa. 2005. Summerwind Ranch at Oak Valley Final Environmental Impact Report. March.

Urban Crossroads. 2020. Trip Generation and Circulation Context for the Oak Valley Town Center. May 15.

2004. Suncal Oak Valley (Calimesa) EIR Noise Analysis, City of Calimesa, California. November.



STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	**5.4**	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	130.1	--	--
COMMERCIAL	129.5	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	***315.5***	**--**	**--**
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.2	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	***1493.1***	--	--
MAJOR ROADS	105.1	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Adopted Specific Plan Land Use Plan

Figure 1

STATISTICAL SUMMARY

LAND USE	ACRES	DENSITY	DU's
RESIDENTIAL			
MANORS *7,200 SF MINIMUM*	125.4	3.0	376
VILLAS *6,000 SF MINIMUM*	193.6	3.7	719
COTTAGES *5,000 SF MINIMUM*	152.9	4.9	744
BUNGALOWS *4,200 SF MINIMUM*	94.5	5.5	517
GARDEN COURTS	67.8	10.1	684
TOWNHOMES	42.8	15.0	643
- RESIDENTIAL SUBTOTALS	***677.0***	***5.4***	***3,683***
NON-RESIDENTIAL			
BUSINESS PARK	128.6	--	--
COMMERCIAL	134.2	--	--
SCHOOLS	45.4	3.5	158*
WATER RECLAMATION FACILITY	10.5	--	--
- NON-RESIDENTIAL SUBTOTALS	318.7	--	--
OPEN SPACE			
PARKS & COMMUNITY REC.	89.6	--	--
OPEN SPACE	645.8	--	--
GARDEN AIR WASH	179.6	--	--
RLC OPTION LANDS	578.7	--	--
- OPEN SPACE SUBTOTALS	1,493.7	--	--
MAJOR ROADS	101.3	--	--
PROJECT TOTALS	***2,590.7***	***1.5***	***3,841***

* DUs are allocated in the case that potential school sites are developed with residential uses.

Specific Plan Amendment No. 1 Boundary

Specific Plan Amendment No. 2 Boundary

Potential open space dedication subject to future Caltrans corridor design widths

Source: T & B Planning Consultants (2020)

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HELIX Environmental Planning

Proposed Specific Plan Land Use Plan

Figure 2



Source: T & B Planning Consultants (2020)

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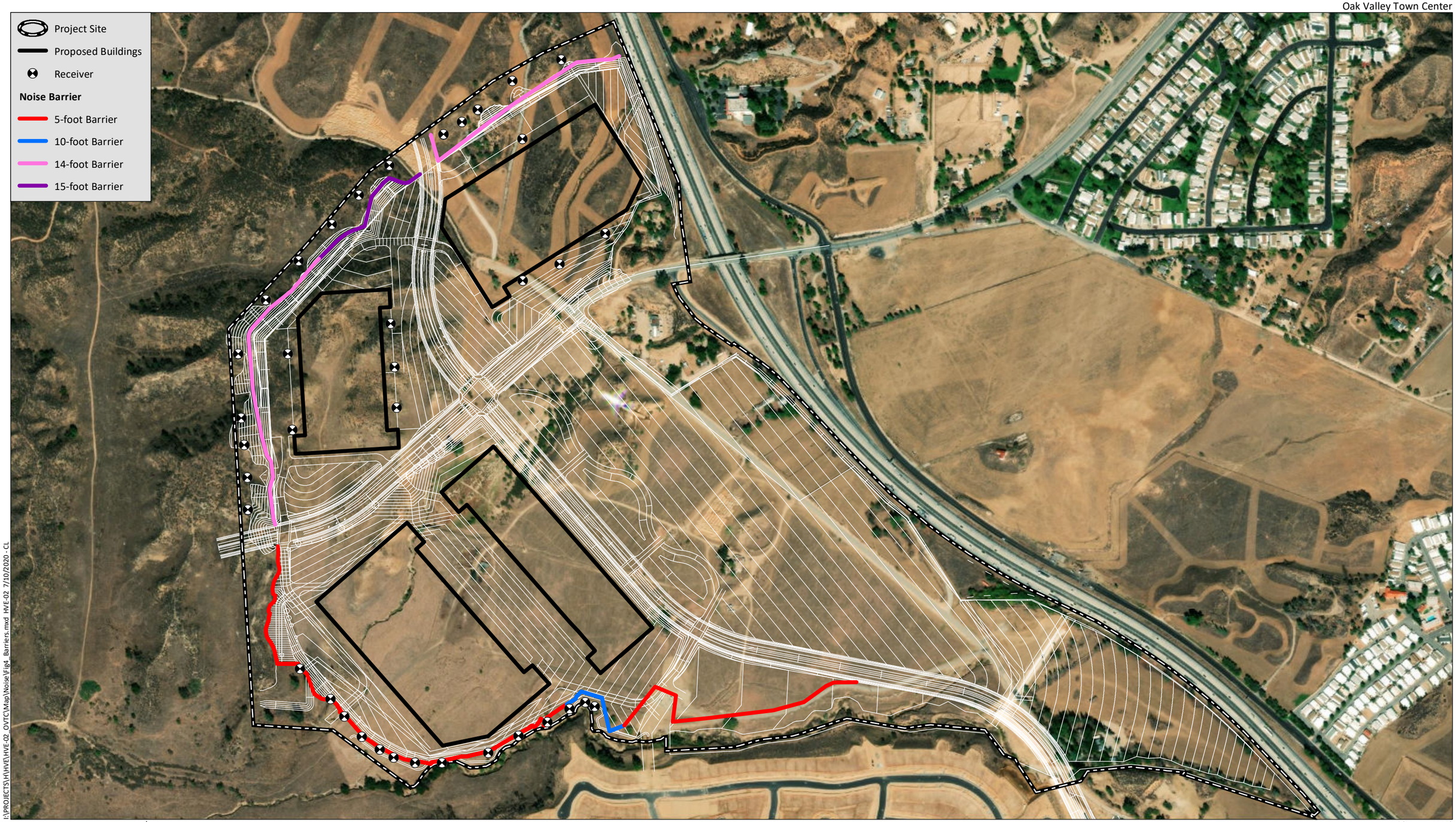
HELIX Environmental Planning

Land Use Plan Comparison

Figure 3

Oak Valley Town Center



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0 500 Feet

Source: Aerial (Maxar, 2018)

HELIX Environmental Planning

Edge Condition Barriers

Figure 4

Attachment 1

CADNA Output Files

All tables

Base sources

Point sources

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494713.43	3759206.83	682.71
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494764.47	3759148.92	682.37
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494806.62	3759107.25	684.75
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494844.98	3759064.60	684.87
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494838.50	3759054.47	677.34
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494784.99	3759114.33	677.33
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494763.30	3759146.23	680.64
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494864.40	3759027.48	680.23
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494803.50	3759105.36	682.42
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494698.79	3759214.60	678.99
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494711.20	3759204.99	680.84
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494725.03	3759189.70	680.91
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494817.89	3759082.69	679.58
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494747.22	3759162.77	680.01

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Bldg 1 Side 2 Backup Alarm		B1S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495005.04	3759185.95	688.48
Bldg 1 Side 2 Backup Alarm		B1S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494973.40	3759222.88	688.48
Bldg 1 Side 2 Backup Alarm		B1S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494920.13	3759283.46	688.48
Bldg 1 Side 2 Backup Alarm		B1S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494889.07	3759321.15	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494929.96	3759273.61	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494907.58	3759297.62	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494873.71	3759335.86	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494914.60	3759280.89	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494955.80	3759242.04	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494968.36	3759220.98	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494986.37	3759211.86	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494889.51	3759315.99	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495000.57	3759183.79	688.48
Bldg 1 Side 2 Air Brake		B1S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495017.21	3759169.12	688.48
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494879.06	3759337.43	689.98
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494932.12	3759276.56	689.98
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494989.41	3759215.54	689.98
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495018.93	3759174.40	689.98
Bldg 1		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495045.62	3759266.90	688.30

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Side 1 Backup Alarm																									
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494989.01	3759332.08	688.30
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494937.37	3759390.71	688.30
Bldg 1 Side 1 Backup Alarm		B1S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495111.65	3759186.63	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494942.91	3759394.81	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495047.32	3759272.06	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494992.42	3759332.41	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495073.36	3759241.64	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495118.41	3759189.90	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495104.66	3759207.63	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495010.07	3759308.61	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494954.87	3759377.59	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495026.20	3759291.43	688.30
Bldg 1 Side 1 Air Brake		B1S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495071.30	3759242.31	688.30
Bldg 2 Side 1 TRU		B2S1TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495014.60	3759309.57	689.80
Bldg 2 Side 1 TRU		B2S1TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495098.55	3759205.07	689.80
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494644.34	3759647.18	691.36
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494640.30	3759696.45	689.80

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494647.94	3759613.86	690.57
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494640.20	3759717.32	687.86
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494644.24	3759629.92	690.81
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494646.84	3759590.64	689.75
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494649.02	3759579.27	689.47
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494650.87	3759557.13	688.66
Bldg 3 Side 1 Backup Alarm		B3S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494640.63	3759679.39	691.41
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494641.37	3759693.70	690.13
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494646.20	3759628.05	690.89
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494640.44	3759708.85	688.66
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494644.37	3759683.27	691.28
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494637.81	3759719.72	687.68
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494643.92	3759660.73	691.76
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494647.34	3759619.32	690.70
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494650.94	3759567.44	689.04
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494648.74	3759551.39	688.46
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494649.90	3759608.04	690.50
Bldg 3		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494648.55	3759583.75	689.63

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Side 1 Air Brake																									
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494646.83	3759598.97	690.02
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494644.08	3759636.50	691.01
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494646.35	3759590.14	689.70
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494647.92	3759612.44	690.52
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494647.15	3759667.35	692.21
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494642.07	3759647.61	691.21
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494638.05	3759696.04	689.70
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494646.52	3759556.28	688.64
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494648.14	3759576.96	689.39
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494645.32	3759650.71	691.55
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494640.58	3759717.04	687.91
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494643.25	3759675.61	691.92
Bldg 3 Side 1 Air Brake		B3S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494648.41	3759542.50	688.14
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494805.76	3759670.28	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494810.82	3759621.51	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494814.59	3759596.15	687.68
Bldg 3 Side 2		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494801.52	3759707.75	687.68

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Backup Alarm																									
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494804.29	3759688.39	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494815.34	3759552.39	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494807.96	3759643.45	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494818.68	3759576.59	687.68
Bldg 3 Side 2 Backup Alarm		B3S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494797.53	3759727.58	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494809.25	3759621.09	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494809.70	3759643.55	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494813.00	3759659.27	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494819.41	3759553.26	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494812.59	3759636.71	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494806.37	3759679.62	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494811.54	3759604.63	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494812.39	3759594.78	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494818.20	3759574.83	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494805.81	3759693.90	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494810.01	3759665.23	687.68
Bldg 3 Side 2 Air		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494817.68	3759591.79	687.68

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Brake																									
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494807.08	3759712.88	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494813.73	3759652.17	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494803.55	3759719.32	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494810.33	3759670.17	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494805.54	3759687.72	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494803.46	3759708.29	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494817.99	3759562.79	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494819.38	3759581.46	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494804.19	3759701.27	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494800.71	3759733.63	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494798.89	3759726.22	687.68
Bldg 3 Side 2 Air Brake		B3S2Air1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494810.61	3759615.62	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494811.10	3759715.06	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494805.70	3759735.27	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494810.39	3759722.05	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494821.95	3759564.07	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494826.49	3759583.69	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494824.35	3759593.96	689.18
Bldg 3 Side 2		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494820.19	3759607.58	689.18

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
TRU																									
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494819.66	3759653.64	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494817.91	3759618.80	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494817.37	3759660.59	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494820.96	3759641.77	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494817.76	3759668.07	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494814.67	3759683.83	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494810.93	3759696.50	689.18
Bldg 3 Side 2 TRU		B3S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	494811.33	3759704.65	689.18
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494902.80	3759951.63	689.30
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494935.24	3759968.19	689.25
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494920.76	3759960.33	689.26
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494953.53	3759979.70	689.24
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494970.35	3759988.80	689.23
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494977.02	3759993.52	689.23
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495051.61	3760039.64	689.21
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494987.61	3759998.92	689.22
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495002.29	3760005.78	689.19
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495022.43	3760021.81	689.22
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495009.71	3760013.56	689.22

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494922.02	3759963.72	689.29
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495082.00	3760057.47	689.19
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494965.72	3759988.87	689.26
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495078.69	3760057.19	689.21
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495098.50	3760068.00	689.19
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494906.74	3759952.95	689.28
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494900.89	3759951.33	689.31
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494888.46	3759945.07	689.07
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494994.13	3760002.21	689.21
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495084.86	3760058.77	689.19
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494943.33	3759972.18	689.23
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495064.63	3760048.35	689.21
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495035.42	3760030.17	689.22
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494958.60	3759981.61	689.23
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495015.36	3760017.65	689.22
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495100.97	3760070.17	689.20
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495071.20	3760050.53	689.19
Bldg 4		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495030.99	3760024.62	689.19

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Side 1 Air Brake																									
Bldg 4 Side 1 Air Brake		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	494981.50	3759994.32	689.21
Bldg 4 Side 1 Backup Alarm		B4S1Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495045.16	3760037.38	689.23
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.08	0.00	0.00	0.0		(none)	1.00	r	494902.38	3759951.52	689.30
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494967.50	3759987.46	689.23
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495009.48	3760012.62	689.21
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494976.55	3759991.37	689.21
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494953.47	3759979.81	689.25
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494994.17	3760002.90	689.21
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	494922.32	3759964.08	689.29
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495080.84	3760055.26	689.18
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495051.15	3760037.58	689.19
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495035.14	3760028.93	689.21
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495066.72	3760049.55	689.21
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495013.75	3759774.85	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495052.49	3759795.32	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495024.07	3759784.40	689.10
Bldg 4 Side 2		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495149.70	3759854.61	689.10

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Air Brake																									
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495139.26	3759848.08	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495103.10	3759829.67	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495089.81	3759817.23	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495186.29	3759880.34	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495163.22	3759861.97	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495202.68	3759891.07	689.13
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495193.35	3759886.12	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495219.36	3759900.35	689.29
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495224.05	3759901.21	689.34
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495163.44	3759865.52	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495110.39	3759830.60	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495040.91	3759794.06	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495171.37	3759869.93	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495152.73	3759857.79	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495131.73	3759843.71	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495057.36	3759801.92	689.10
Bldg 4 Side 2 Air		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495124.82	3759841.89	689.10

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Brake																									
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495068.06	3759805.07	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495068.08	3759808.09	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495187.11	3759876.98	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495145.43	3759854.60	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495120.39	3759842.78	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495075.34	3759812.02	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495237.03	3759918.40	689.48
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495178.66	3759875.77	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495231.61	3759910.29	689.38
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495083.47	3759819.10	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495227.35	3759909.28	689.33
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495203.64	3759894.75	689.12
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495114.64	3759838.66	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495089.16	3759823.51	689.10
Bldg 4 Side 2 Air Brake		B4S2Air1	106.6	106.6	106.6	Lw	AiRB1		0.0	0.0	0.0				0.02	0.00	0.00	0.0		(none)	1.00	r	495021.68	3759777.28	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495022.84	3759777.84	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495051.35	3759796.32	689.10

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495065.76	3759806.15	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495110.64	3759833.18	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495128.65	3759840.41	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495149.49	3759856.02	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495164.15	3759862.45	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495205.28	3759890.04	689.17
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495186.90	3759878.94	689.10
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495233.58	3759909.31	689.41
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495088.45	3759819.28	690.60
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495221.96	3759901.20	689.31
Bldg 4 Side 2 Backup Alarm		B4S2BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495221.96	3759901.20	689.31
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495237.07	3759918.62	690.98
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495204.99	3759895.50	690.63
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495152.19	3759860.13	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495193.64	3759887.23	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495011.13	3759776.20	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495183.68	3759880.20	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495176.56	3759878.23	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495127.74	3759846.55	690.60
Bldg 4		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495169.37	3759870.69	690.60

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Side 2 TRU																									
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495158.06	3759864.66	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495220.07	3759897.54	690.81
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495112.83	3759840.39	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495102.65	3759830.31	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495026.54	3759783.12	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495144.51	3759854.61	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495122.89	3759842.30	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495086.21	3759817.27	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495044.23	3759792.34	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495134.22	3759852.81	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495090.33	3759822.58	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495073.58	3759813.35	690.60
Bldg 4 Side 2 TRU		B4S2TRU1	109.5	109.5	109.5	Lw	Refr1		0.0	0.0	0.0				5.00	0.00	0.00	0.0		(none)	2.50	r	495056.40	3759802.84	690.60
Bldg 4 Side 1 Backup Alarm		B4S1BA1	86.8	86.8	86.8	Lw	BA1		0.0	0.0	0.0				0.80	0.00	0.00	0.0		(none)	1.00	r	495097.24	3760064.59	689.16

Line sources

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src			
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number			Speed
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night	(km/h)

Area sources

Name	M.	ID	Result. PWL	Result. PWL''	Lw / Li	Correction	Sound Reduction	Attenuation	Operating Time	K0	Freq.	Direct.	Moving Pt. Src

			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m^2)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night

Technical sources

Railway

Name	M.	ID	Lw'		Train Class	Correct.	Vmax
			Day	Night		Track	
			(dBA)	(dBA)		(dB)	(km(km/h)

Train classes

Name	M.	ID	Lw'		Train Class							Correct.	Vmax
			Day	Night	Type	Number of Trains			v	Lw,i' (dBA)		Track	
			(dBA)	(dBA)		Day	Evening	Night	(km/h)	Day	Night	(dB)	(km/h)

Parking lots

Name	M.	ID	Type	Lwa			Event Data						Penalty Type		Penalty Surface		According to	Operating Time		
				Day	Special	Night	Ref. Quantity	Number B	No. Spaces/RefQ	Events/h/RefQ			Kpa	Type	Kstro	Surface		Day	Special	Night
				(dBA)	(dBA)	(dBA)				Day	Special	Night	(dB)		(dB)			(min)	(min)	(min)

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
		Streets1	60.4	0.0	0.0			60.0	0.0	0.0	100.0	0.0	25.0	65		0.0	0.0	1	0.0	0.0		
		Streets1	0.0	0.0	0.0	0	Federal Road							100		0.0	0.0	1	0.0	0.0		
		Streets1	60.4	0.0	0.0			60.0	0.0	0.0	100.0	0.0	25.0	65		0.0	0.0	1	0.0	0.0		
		Streets1	60.4	0.0	0.0			60.0	0.0	0.0	100.0	0.0	25.0	65		0.0	0.0	1	0.0	0.0		
		Streets1	57.4	0.0	0.0			30.0	0.0	0.0	100.0	0.0	25.0	65		0.0	0.0	1	0.0	0.0		
		Streets1	0.0	0.0	0.0	0	Federal Road							100		0.0	0.0	1	0.0	0.0		
		Streets1	57.4	0.0	0.0			30.0	0.0	0.0	100.0	0.0	25.0	65		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Driveway		B1S1DR1	59.8	0.0	0.0			18.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Heavy		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Heavy		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Heavy		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Side 1 Heavy																						
Bldg 1 Side 1 Heavy		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Heavy		B1S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Medium		B1S1H1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Medium		B1S1H1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Medium		B1S1H1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 Side 1 Medium		B1S1H1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4	4	0.0	0.0	1	0.0	0.0		
Bldg 1 & 2 Primary Entrance Driveway		B1S2DR1	56.0	0.0	0.0			30.0	0.0	0.0	100.0	0.0	25.0	48		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Driveway		B1S2DR1	58.0	0.0	0.0			8.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Heavy		B1S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Medium		B2S2Med1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Medium		B2S2Med1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Medium		B2S2Med1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 1 Side 2 Medium		B2S2Med1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Entrance Driveway		B2S1DR1	59.8	0.0	0.0			18.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Heavy		B2S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Heavy		B2S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Heavy		B2S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 2 Side 1 Heavy		B2S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Heavy		B2S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Medium		B2S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Medium		B2S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Medium		B2S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 2 Side 1 Medium		B2S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Driveway		B3S1DR1	58.4	0.0	0.0			14.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Medium		B3S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 1 Heavy		B3S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Drive		B3S2DR1	66.8	0.0	0.0			90.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Medium		B3S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 3 Side 2 Heavy		B3S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Building 4 Side 1 Driveway		B4S1DR1	59.7	0.0	0.0			18.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Medium		B4S1M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 1 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S1H1	52.0	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S1H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Driveway		B4S2DR1	63.0	0.0	0.0			37.0	0.0	0.0	100.0	0.0	25.0	8		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Heavy		B4S2H1	55.2	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		
Bldg 4 Side 2 Medium		B4S2M1	47.6	0.0	0.0			2.0	0.0	0.0	100.0	0.0	25.0	4		0.0	0.0	1	0.0	0.0		

Traffic lights

Name	M.	ID	Active			Height		Coordinates		
			Day	Evening	Night	Begin		X	Y	Z
						(m)		(m)	(m)	(m)

Immission

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495116.24	3758983.64	690.64
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495052.05	3758884.89	691.07
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495079.33	3758868.84	691.10
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495133.89	3758996.68	690.59
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495153.68	3758978.49	690.54
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495167.06	3758971.00	690.34
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495180.96	3758964.05	690.07
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495200.75	3758962.45	689.94
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495214.13	3758961.38	689.88
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495229.10	3758964.59	689.92
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495241.41	3758966.72	689.92
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495256.92	3758967.79	689.92
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495274.57	3758969.40	690.07
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495288.48	3758974.21	690.34
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495304.52	3758978.49	690.74
	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495317.36	3758980.10	691.20
R 01	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494628.10	3759654.92	688.20
R 02	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494772.96	3759120.52	674.70
R 03	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494764.41	3759947.77	703.30
R 04	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494690.54	3759864.20	702.06
R 05	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494585.22	3759759.49	697.57
R 06	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494553.12	3759726.86	699.31
R 07	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494541.36	3759673.36	702.67
R 08	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494541.35	3759646.62	701.44
R 09	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494542.96	3759623.08	698.83
R 10	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494562.75	3759610.78	692.58
R 11	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494547.24	3759586.17	697.60
R 12	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494548.31	3759562.64	705.06
R 13	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494550.45	3759540.17	705.00
R 14	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495101.40	3760163.08	702.60
R 15	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495087.22	3760159.77	702.36
R 16	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	495008.29	3760127.25	699.90
R 17	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494994.04	3760119.69	699.49
R 18	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494962.36	3760094.54	697.78
R 19	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494950.56	3760085.58	697.09
R 20	-		-88.0	-88.0	0.0	0.0		x	Total	1.52	r	494922.94	3760061.78	695.39
R 2 01	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494628.10	3759654.92	691.86
R 2 02	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494772.96	3759120.52	678.36
R 2 03	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494764.41	3759947.77	706.96
R 2 04	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494690.54	3759864.20	705.72
R 2 05	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494585.22	3759759.49	701.23
R 2 06	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494553.12	3759726.86	702.97
R 2 07	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494541.36	3759673.36	706.33
R 2 08	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494541.35	3759646.62	705.10
R 2 09	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494542.96	3759623.08	702.49
R 2 10	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494562.75	3759610.78	696.24
R 2 11	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494547.24	3759586.17	701.26
R 2 12	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494548.31	3759562.64	708.72
R 2 13	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494550.45	3759540.17	708.66
R 2 14	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	495101.40	3760163.08	706.26
R 2 15	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	495087.22	3760159.77	706.02
R 2 16	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	495008.29	3760127.25	703.56
R 2 17	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494994.04	3760119.69	703.15
R 2 18	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494962.36	3760094.54	701.44
R 2 19	-		-88.0	-88.0	0.0	0.0		x	Total	5.18	r	494950.56	3760085.58	700.75
R OS 01	+		51.9	-77.7	0.0	0.0		x	Total	1.52	r	494922.94	3760061.78	695.96
R OS 02	+		23.3	-80.2	0.0	0.0		x	Total	1.52	r	494657.20	3759140.98	655.97
R OS 03	+		26.1	-80.2	0.0	0.0		x	Total	1.52	r	494708.94	3759090.37	655.05
R OS 04	+		27.1	-80.2	0.0	0.0		x	Total	1.52	r	494732.49	3759061.71	659.27
R OS 05	+		37.4	-79.6	0.0	0.0		x	Total	1.52	r	494762.11	3759027.43	661.38

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
R OS 06	+		34.4	-79.9	0.0	0.0		x	Total	1.52	r	494792.33	3759006.36	658.61
R OS 07	+		40.1	-79.3	0.0	0.0		x	Total	1.52	r	494815.86	3758992.42	658.69
R OS 08	+		33.0	-80.0	0.0	0.0		x	Total	1.52	r	494851.72	3758984.59	659.89
R OS 09	+		27.6	-80.2	0.0	0.0		x	Total	1.52	r	494897.06	3758984.59	662.37
R OS 10	+		30.1	-80.2	0.0	0.0		x	Total	1.52	r	494974.66	3759002.47	664.93
R OS 11	+		35.6	-80.0	0.0	0.0		x	Total	1.52	r	495024.99	3759031.03	668.15
R OS 12	+		41.9	-79.4	0.0	0.0		x	Total	1.52	r	495073.58	3759054.53	668.73
R OS 13	+		44.9	-78.7	0.0	0.0		x	Total	1.52	r	495110.51	3759076.43	671.25
R OS 13	+		43.5	-79.1	0.0	0.0		x	Total	1.52	r	495136.79	3759087.92	672.39
R OS 13	+		44.3	-78.5	0.0	0.0		x	Total	1.52	r	495152.84	3759081.50	672.63

Areas of land use

Obstacles

Screens

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
			left	right		horz.	vert.	Begin		End	
					(m)	(m)	(m)	(m)		(m)	
		Pr_Daylight						3.66	r		

Houses

Name	M.	ID	RB	Residents	Absorption	Height	
						Begin	
						(m)	
FF 2262.6	+	Pr_Building	x	0			
FF 2258.0	+	Pr_Building	x	0			
FF 2220		Pr_Building	x	0			
FF 2260.5	+	Pr_Building	x	0			
FF 2260.5	+	Pr_Building	x	0		10.00	r

Foliage

Name	M.	ID	Height
			(m)

Built up areas

Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment D

Trip Generation and Circulation Context

September 2020

September 28, 2020

Mr. John Ohanian
Oak Valley Development Company
P.O. Box 645
Calimesa, CA 92320

SUBJECT: TRIP GENERATION AND CIRCULATION CONTEXT FOR THE OAK VALLEY TOWN CENTER

Dear Mr. John Ohanian:

The proposed Oak Valley Town Center ("Project") is located south of Singleton Road and west of Interstate 10 in Calimesa. Exhibit 1 illustrates the Project land use plan, and Exhibit 3 illustrates the planning areas which encompass the proposed Project. For traffic analysis purposes, the following building gross floor areas have been derived from a recent illustrative plan for the Project:

- 1,020,800 square feet of high-cube parcel hub warehouse
- 1,229,200 square feet of high-cube cold storage warehouse
- 751,800 square feet of commercial retail

The Project is located within the Summerwind Ranch Specific Plan, which was previously analyzed in the Summerwind Ranch Traffic Impact Analysis (March 2, 2005). Project phasing requirements have been updated in the Oak Valley Town Center Traffic Phasing Evaluation (September 28, 2020).

Exhibit 2 shows the traffic analysis zones (TAZs) utilized in the 2005 Analysis to disaggregate land uses and trip generation in the Summerwind area. The Project is in TAZs P, Q, R, S, T and U of the Summerwind SP.

Table 1 presents a comparison of land use quantities by planning area for both the approved Summerwind Ranch SP and the Project.

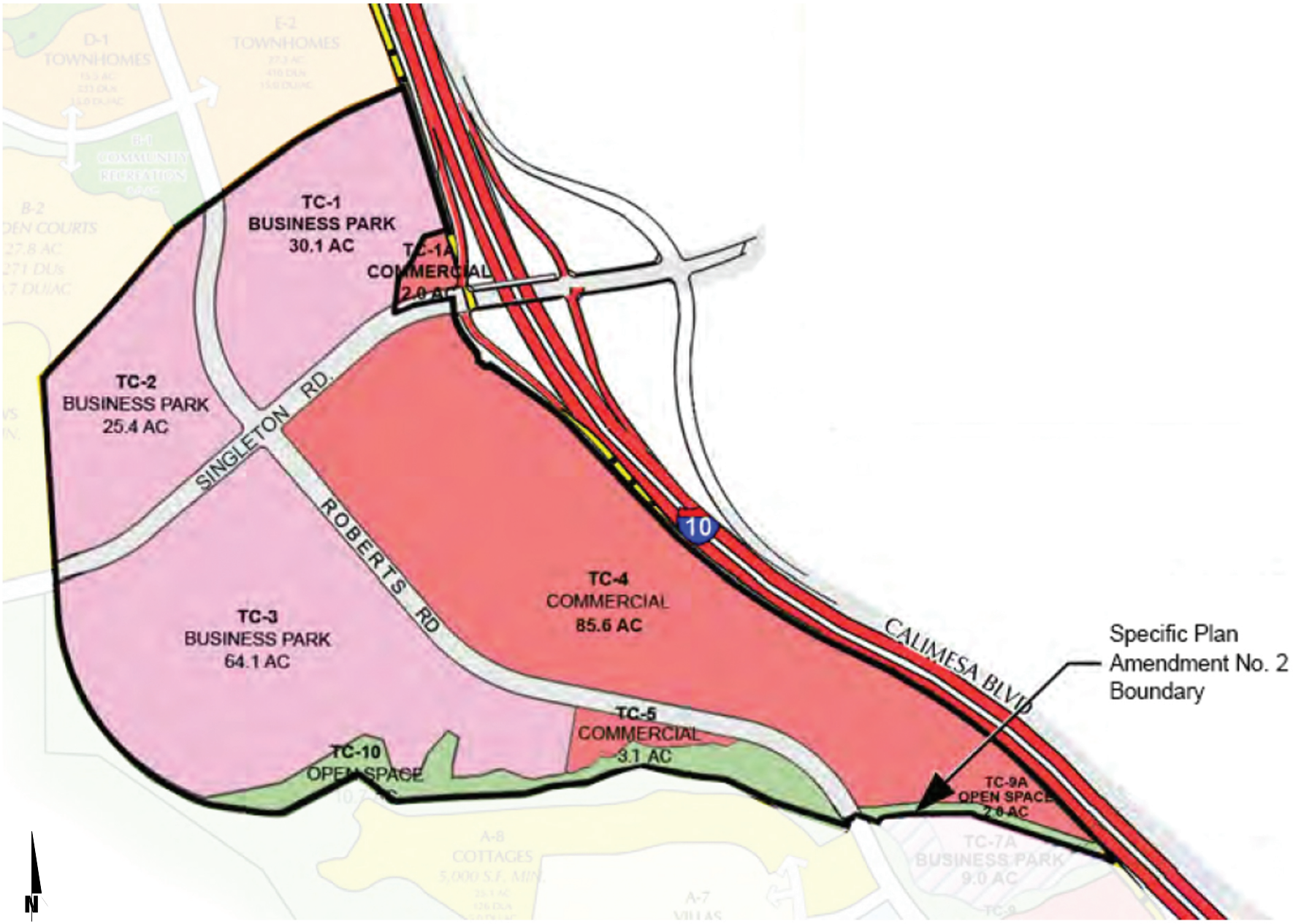
As shown in Table 1, land uses included in the 2005 analysis for TC-1 consist of 196.4 thousand square feet (staff) of commercial retail (TAZ S) and 75.5 tiff of business park (portion of TAZ T). The current Project accommodates 620.3 tiff of high cube parcel hub warehouse within TC-1.

TC-2 in the 2005 analysis includes 343.9 test of business park (most of TAZ T). The Project accommodates 400.5 test of high cube parcel hub warehouse to be developed in TC- 2 .

TC-3 in the 2005 analysis consists of 468.6 tsf of business park (TAZ P) and 154.8 tsf of commercial retail (portion of TAZ Q). The Project accommodates 1,229.2 tsf of cold storage warehouse within TC- 3.

In the 2005 analysis, TC-4 consists of 300.4 tsf of commercial (most of TAZ Q), 691 tsf of business park (TAZ R), and 25.6 tsf of additional commercial retail (TAZ U). The Project proposes a total of 751.8 tsf of commercial retail within TC- 4.

EXHIBIT 1: PROPOSED OAK VALLEY TOWN CENTER LAND USE PLAN



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URBAN CROSSROADS

EXHIBIT 2: SUMMERWIND RANCH SPECIFIC PLAN TRAFFIC ANALYSIS ZONES



LEGEND:

P = APPROVED SUMMERWIND RANCH SP TAZ

= 2005 TIA ROADWAY ALIGNMENT

N

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EXHIBIT 3: PROPOSED OAK VALLEY TOWN CENTER PLANNING AREAS

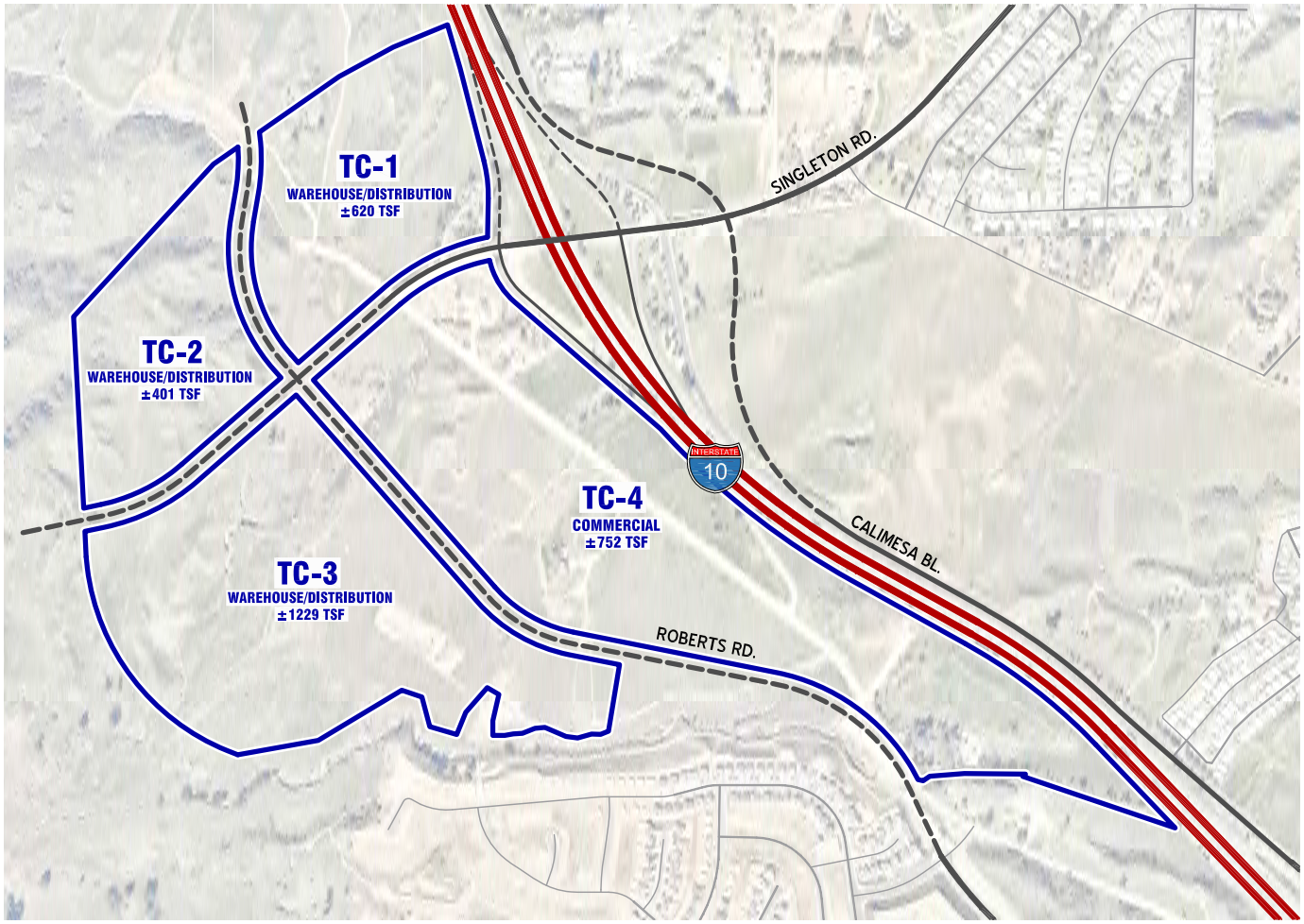

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TABLE 1: LAND USE COMPARISON SUMMARY

Approved Summerwind Ranch SP					Proposed Oak Valley Town Center			
Planning Area	**TAZ**	**Land Use**	**Quantity[1]**		**Planning Area**	**Land Use**	**Quantity[1]**	
TC-1	S	Commercial Retail	196.4	TSF	TC-1	High-Cube Parcel Hub Warehouse	620.3	TSF
	T.1	Business Park (18% of TAZ T)	75.5	TSF				
	Subtotal		271.9	TSF				
TC-2	T.2	Business Park (82% of TAZ T)	343.9	TSF	TC-2	High-Cube Parcel Hub Warehouse	400.5	TSF
TC-3	P	Business Park	468.6	TSF	TC-3	High-Cube Cold Storage Warehouse	791.5	TSF
	Q.1	Commercial Retail (34% of TAZ Q)	154.8	TSF		High-Cube Cold Storage Warehouse	437.8	TSF
	Subtotal		623.4	TSF		Subtotal	1,229.2	TSF
TC-4	Q.2	Commercial Retail (66% of TAZ Q)	300.4	TSF	TC-4	Commercial Retail	147.4	TSF
	R	Business Park	691.0	TSF		Commercial Retail	600.4	TSF
	U	Commercial Retail	25.6	TSF		Commercial Retail	4.0	TSF
	Subtotal		1,017.0	TSF		Subtotal	751.8	TSF
Approved Summerwind Ranch SP Total			**2,256.2**	**TSF**	**Proposed Oak Valley Town Center**		**3,001.8**	**TSF**

[1] TSF = Thousand Square Feet

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TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development, and is based upon the specific land uses planned for a given project. Table 2 shows the actual vehicle trip generation rates for the Project, as well as the actual vehicle trip generation summary with daily and peak hour trip generation estimates.

Table 3 presents the passenger-car-equivalent (PCE) trip generation rates for the Project with the resulting PCE daily and peak hour trip generation estimates for the Project.

The trip generation rates used for this analysis are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation manual, 10th Edition, 2017. ITE land use codes 157 (High-Cube Cold Storage Warehouse), 156 (High-Cube Parcel Hub Warehouse), and 820 (Shopping Center/Commercial) have been utilized to derive trip generation estimates for the Project.

As noted on Tables 2 and 3, refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips by vehicle mix. Data regarding the vehicle mix has been obtained from the High Cube Warehouse Vehicle Trip Generation Analysis (ITE, October 2016). The ITE 2016 vehicle trip generation analysis provides vehicle mix datasets for Cold Storage Warehouse uses, which consists of 32.2% trucks for daily trips, 30.8% trucks for AM peak hour trips and 21.7% trucks for PM peak hour trips.

The South Coast Air Quality Management (SCAQMD) recommended truck mix for each axle type is utilized for 2-axle, 3-axle, and 4+-axle trucks. The recommended truck mix portions for warehouses consist of the following:

SCAQMD Truck Mix		
Truck Type	**Without Cold Storage**	**With Cold Storage**
2-axle	16.70%	34.7%
3-axle	20.70%	11.0%
4+-axle	62.60%	54.3%

As shown on Table 2, the proposed Project is anticipated to generate a net total of 32,873 actual vehicle trip-ends per day with 1,488 AM peak hour trips and 3,381 PM peak hour trips.

Refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips between passenger cars and trucks. Trip generation for heavy trucks was further subdivided by truck type (or number of axles). The total truck percentage is comprised of 3 different truck types: 2-axle, 3-axle, and 4+-axle trucks. Passenger Car Equivalent (PCE) factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles).

PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE

TABLE 2: PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
Land Use	ITE LU Code	Quantity [2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse [3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371
High-Cube Parcel Hub Warehouse [3,4,5]	156	1,020.8 TSF	0.350	0.350	0.700	0.435	0.205	0.640	4.630
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.018	0.018	0.036	0.016	0.007	0.023	0.250
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.022	0.022	0.044	0.020	0.009	0.029	0.308
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.067	0.067	0.134	0.059	0.028	0.087	0.933
Shopping Center	820	751.8 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity [2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle:			*11*	*11*	*22*	*10*	*4*	*14*	*155*
	3-axle:			*14*	*14*	*28*	*12*	*6*	*18*	*191*
	4+-axle:			*42*	*42*	*84*	*37*	*17*	*54*	*579*
	- Net Truck Trips (Actual Vehicles)			67	67	134	59	27	86	925
	TC-1 Subtotal (Actual Vehicles) [6]			**217**	**218**	**435**	**271**	**127**	**398**	**2,872**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle:			*7*	*7*	*14*	*6*	*3*	*9*	*100*
	3-axle:			*9*	*9*	*18*	*8*	*4*	*12*	*123*
	4+-axle:			*27*	*27*	*54*	*24*	*11*	*35*	*374*
	- Net Truck Trips (Actual Vehicles)			43	43	86	38	18	56	597
	TC-2 Subtotal (Actual Vehicles) [6]			**140**	**140**	**280**	**175**	**82**	**257**	**1,854**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles) [6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**
TC-4	Commercial Retail	820	751.8 TSF	436	271	707	1,376	1,489	2,865	28,380
	- Commercial Pass-By/Internal (10%)			*(35)*	*(35)*	*(70)*	*(143)*	*(143)*	*(286)*	*(2,838)*
	TC-4 Subtotal			**401**	**236**	**637**	**1,233**	**1,346**	**2,579**	**25,542**
TOTAL EXTERNAL TRIPS (ACTUAL VEHICLES)				**863**	**625**	**1,488**	**1,721**	**1,660**	**3,381**	**32,873**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE) Trip Generation Handbook Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE) High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 3: PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (PCE)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
High-Cube Cold Storage Warehouse (With PCE Adj.)[3,4,5,6]	157	1,229.2 TSF	0.121	0.036	0.157	0.045	0.111	0.156	3.056
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.014	0.005	0.019	0.005	0.009	0.014	0.356
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.006	0.002	0.008	0.002	0.004	0.006	0.150
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.042	0.012	0.054	0.012	0.030	0.042	1.113
High-Cube Parcel Hub Warehouse (With PCE Adj.)[3,4,5,6]	156	1,020.8 TSF	0.514	0.515	1.029	0.582	0.274	0.856	6.929
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.027	0.027	0.054	0.024	0.011	0.035	0.375
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.044	0.044	0.088	0.040	0.018	0.058	0.616
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.201	0.201	0.402	0.177	0.084	0.261	2.799
Commercial Retail	820	751.8 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
				AM Peak Hour			PM Peak Hour			
Planning Area	Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*17*	*34*	*15*	*7*	*22*	*234*
	3-axle (PCE = 2.0):			*28*	*28*	*56*	*25*	*11*	*36*	*382*
	4+-axle (3.0):			*126*	*126*	*252*	*110*	*52*	*162*	*1,736*
	- Net Truck Trips (PCE)			171	171	342	150	70	220	2,352
	TC-1 Subtotal (PCE)[6]			**321**	**322**	**643**	**362**	**170**	**532**	**4,299**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle (PCE = 1.5):			*11*	*11*	*22*	*10*	*4*	*14*	*150*
	3-axle (PCE = 2.0):			*18*	*18*	*36*	*16*	*8*	*24*	*248*
	4+-axle (3.0):			*81*	*81*	*162*	*71*	*34*	*105*	*1,122*
	- Net Truck Trips (PCE)			110	110	220	97	46	143	1,520
	TC-2 Subtotal (PCE)[6]			**207**	**207**	**414**	**234**	**110**	**344**	**2,777**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	22	95	33	82	115	1,766
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*6*	*23*	*6*	*11*	*17*	*437*
	3-axle (PCE = 2.0):			*8*	*2*	*10*	*2*	*5*	*7*	*184*
	4+-axle (3.0):			*51*	*15*	*66*	*15*	*36*	*51*	*1,368*
	- Net Truck Trips (PCE)			76	23	99	23	52	75	1,989
	TC-3 Subtotal (PCE)[6]			**149**	**45**	**194**	**56**	**134**	**190**	**3,755**
TC-4	Commercial Retail	820	751.8 TSF	436	271	707	1,376	1,489	2,865	28,380
	- Commercial Pass-By/Internal (10%)			*(35)*	*(35)*	*(70)*	*(143)*	*(143)*	*(286)*	*(2,838)*
	TC-4 Subtotal			**401**	**236**	**637**	**1,233**	**1,346**	**2,579**	**25,542**
TOTAL EXTERNAL TRIPS (PCE)				**1,078**	**810**	**1,888**	**1,885**	**1,760**	**3,645**	**36,373**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Passenger Car Equivalent (PCE) rates are per San Bernardino County Transportation Authority (SBCTA)

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factors are consistent with the recommended PCE factors in Appendix B of the San Bernardino County Congestion Management Program (CMP), 2016 Update. Note that these procedures are consistent with those adopted by the County of Riverside for warehouse projects, with the exception of the PCE factors, where the San Bernardino County CMP factors have been utilized in an effort to conduct a conservative analysis. As shown on Table 3, the proposed Project is anticipated to generate a net total of 36,373 PCE trip-ends per day, 1,888 PCE AM peak hour trips and 3,645 PCE PM peak hour trips.

Table 4 presents the trip generation summary for Summerwind SP TAZ's that are within the Oak Valley Town Center (TAZ's P, Q, R, S, T and U), based upon the Summerwind Ranch Traffic Impact Analysis (March 2, 2005). As shown on Table 4, the Summerwind TAZs within the project area were previously estimated to generate a net total of 44,425 vehicle trip-ends per day with 2,762 AM peak hour trips and 4,377 PM peak hour trips.

Based on the comparison results presented on Table 5, the Project land uses (with PCE estimates) are estimated to generate the following differences when compared to the 2005 Summerwind traffic analysis:

- 8,052 fewer trip-ends per day
- 1,116 fewer AM inbound peak hour trips
- 242 more AM outbound peak hour trips
- 290 more PM inbound peak hour trips
- 1,022 fewer PM outbound peak hour trips

The trip distribution patterns for the Project town center areas are shown on Exhibits 4 through 7. For the new high cube warehouse land uses in TC-1 through TC-3 (Exhibits 4 through 6), the orientation of traffic to the I-10 Freeway has been greatly increased in comparison to the Summerwind Ranch Traffic Impact Analysis. Approximately 30% of high cube warehouse traffic travels westbound on the I-10 Freeway and approximately 30% of high cube warehouse traffic travels eastbound on the I-10 Freeway. The TC-4 commercial area on Exhibit 7 interacts less with the I-10 Freeway than the industrial / warehousing areas do.

AREA CONDITIONS

This section provides a summary of the planned circulation network as well as a review of long range future volumes and peak hour intersection operations for the following locations:

1. *Woodhouse/Roberts Road & Singleton Road*
2. *I-10 Eastbound On-Ramp & Singleton Road*
3. *I-10 Westbound Off-Ramp & Singleton Road*
4. *Calimesa Boulevard & Singleton Road*
5. *Realigned Roberts Road & Singleton Road*
6. *TC-4 Access & Singleton Rd.*

TABLE 4: PREVIOUS SUMMERWIND RANCH SP TRIP GENERATION SUMMARY

Previous Summerwind Ranch SP Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Business Park (419 TSF)	770	419.0 TSF	1.180	0.230	1.410	0.300	1.010	1.310	12.530
Business Park (469 TSF)	770	469.0 TSF	1.180	0.220	1.400	0.300	1.000	1.300	12.340
Business Park (691 TSF)	770	691.0 TSF	1.170	0.220	1.390	0.290	0.970	1.260	11.830
Commercial Retail (26 TSF)	820	26.0 TSF	1.640	1.050	2.690	4.750	5.150	9.900	108.820
Commercial Retail (196 TSF)	820	196.0 TSF	0.730	0.470	1.200	2.390	2.590	4.980	53.660
Commercial Retail (455 TSF)	820	455.0 TSF	0.520	0.330	0.850	1.800	1.940	3.740	39.960

Previous Summerwind Ranch SP Trip Generation Results[1]											
Planning Area	TAZ	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
					In	Out	Total	In	Out	Total	
TC-1	S	Commercial Retail (196 TSF)	820	196.4 TSF	143	92	235	469	509	978	10,539
	T.1	Business Park (419 TSF)	770	75.5 TSF	89	17	106	23	76	99	946
		- Commercial Pass-By/Internal (20%)			*(29)*	*(18)*	*(47)*	*(94)*	*(102)*	*(196)*	*(2,108)*
		TC-1 Subtotal			**203**	**91**	**294**	**398**	**483**	**881**	**9,377**
TC-2	T.2	Business Park (419 TSF)	770	343.9 TSF	406	80	486	103	348	451	4,309
		TC-2 Subtotal			**406**	**80**	**486**	**103**	**348**	**451**	**4,309**
TC-3	P	Business Park (469 TSF)	770	468.6 TSF	553	103	656	141	469	610	5,783
	Q.1	Commercial Retail (455 TSF)	820	154.8 TSF	80	51	131	279	300	579	6,186
		- Commercial Pass-By/Internal (20%)			*(15)*	*(10)*	*(25)*	*(56)*	*(60)*	*(116)*	*(1,238)*
		TC-3 Subtotal			**618**	**144**	**762**	**364**	**709**	**1,073**	**10,731**
TC-4	Q.2	Commercial Retail (455 TSF)	820	300.4 TSF	156	99	255	541	583	1,124	12,004
	R	Business Park (691 TSF)	770	691.0 TSF	808	152	960	200	670	870	8,175
	U	Commercial Retail (26 TSF)	820	25.6 TSF	42	27	69	122	132	254	2,786
		- Commercial Pass-By/Internal (20%)			*(39)*	*(25)*	*(64)*	*(133)*	*(143)*	*(276)*	*(2,957)*
		TC-4 Subtotal			**967**	**253**	**1,220**	**730**	**1,242**	**1,972**	**20,008**
PREVIOUS SUMMERWIND RANCH SP TOTAL					**2,194**	**568**	**2,762**	**1,595**	**2,782**	**4,377**	**44,425**

[1] Source: Summerwind Ranch Traffic Impact Analysis (Final). Prepared by Urban Crossroads, Inc. March 2005.

[2] TSF = Thousand Square Feet

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TABLE 5: TRIP GENERATION COMPARISON SUMMARY

Planning Area	Land Use	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
TC-1	Approved Summerwind Ranch SP[1]	203	91	294	398	483	881	9,377
	Proposed Oak Valley Town Center (with PCE)	321	322	643	362	170	532	4,299
	Delta (Proposed - Previous)	*118*	*231*	*349*	*-36*	*-313*	*-349*	*-5,078*
TC-2	Approved Summerwind Ranch SP[1]	406	80	486	103	348	451	4,309
	Proposed Oak Valley Town Center (with PCE)	207	207	414	234	110	344	2,777
	Delta (Proposed - Previous)	*-199*	*127*	*-72*	*131*	*-238*	*-107*	*-1,532*
TC-3	Approved Summerwind Ranch SP[1]	618	144	762	364	709	1,073	10,731
	Proposed Oak Valley Town Center (with PCE)	149	45	194	56	134	190	3,755
	Delta (Proposed - Previous)	*-469*	*-99*	*-568*	*-308*	*-575*	*-883*	*-6,976*
TC-4	Approved Summerwind Ranch SP[1]	967	253	1,220	730	1,242	1,972	20,008
	Proposed Oak Valley Town Center (with PCE)	401	236	637	1,233	1,346	2,579	25,542
	Delta (Proposed - Previous)	*-566*	*-17*	*-583*	*503*	*104*	*607*	*5,534*
Approved Summerwind Ranch SP[1]		**2,194**	**568**	**2,762**	**1,595**	**2,782**	**4,377**	**44,425**
Proposed Oak Valley Town Center (with PCE)		**1,078**	**810**	**1,888**	**1,885**	**1,760**	**3,645**	**36,373**
Delta (Proposed - Previous)		***-1,116***	***242***	***-874***	***290***	***-1,022***	***-732***	***-8,052***

[1] Source: Summerwind Ranch Traffic Impact Analysis (Final). Prepared by Urban Crossroads, Inc. March 2005.

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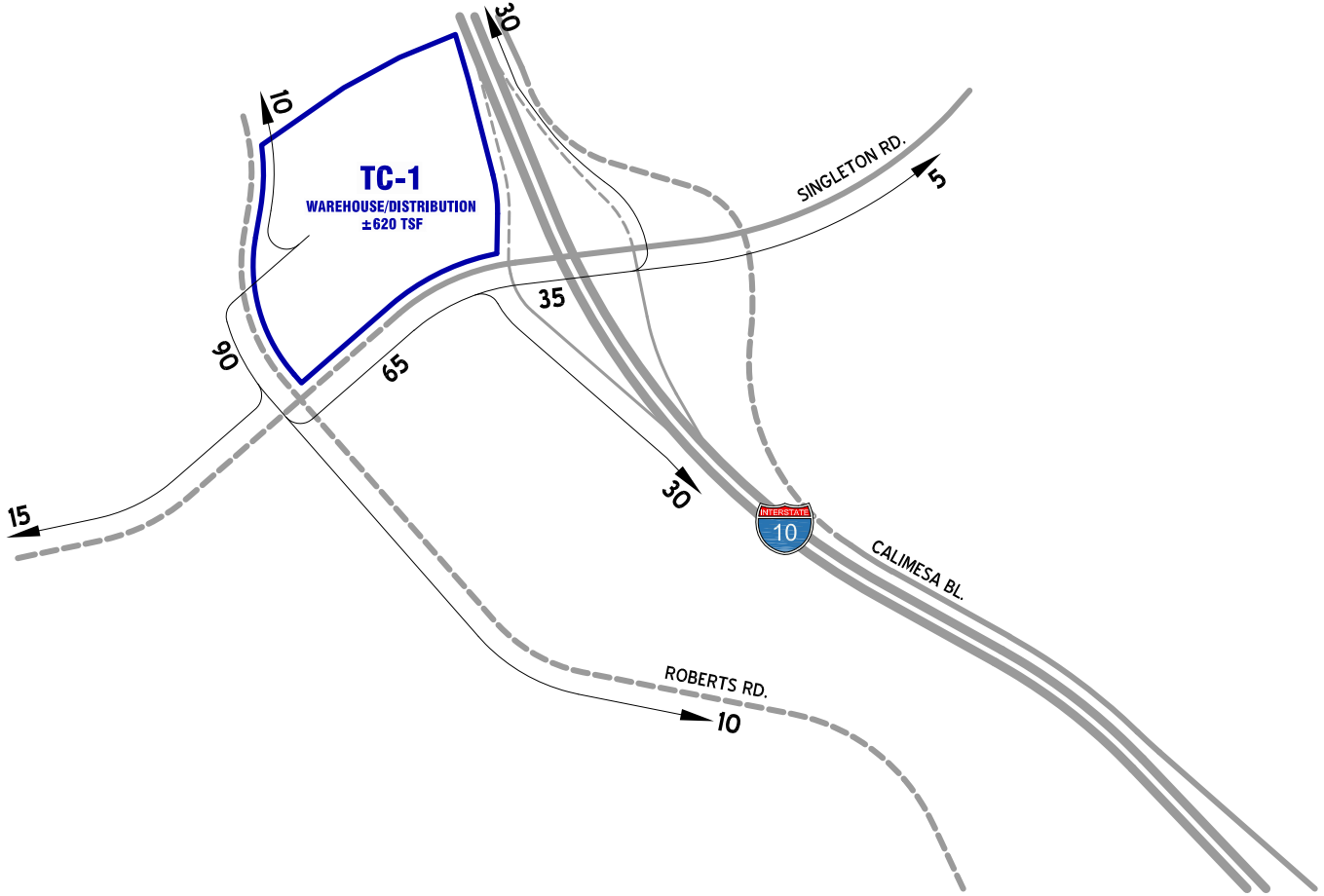
EXHIBIT 4: TC-1 PROJECT TRIP DISTRIBUTION



LEGEND:

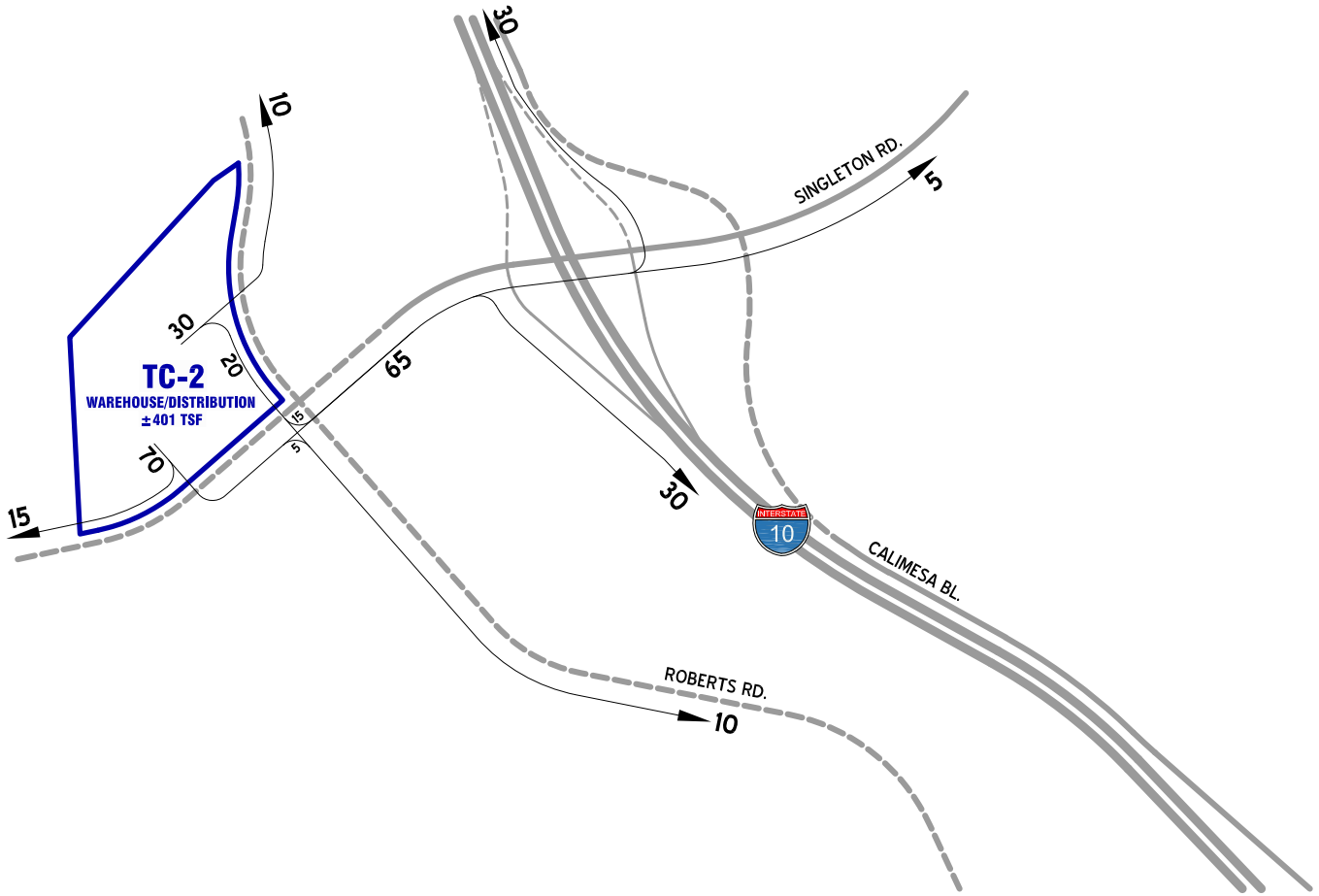
TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 5: TC-2 PROJECT TRIP DISTRIBUTION



LEGEND:

TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

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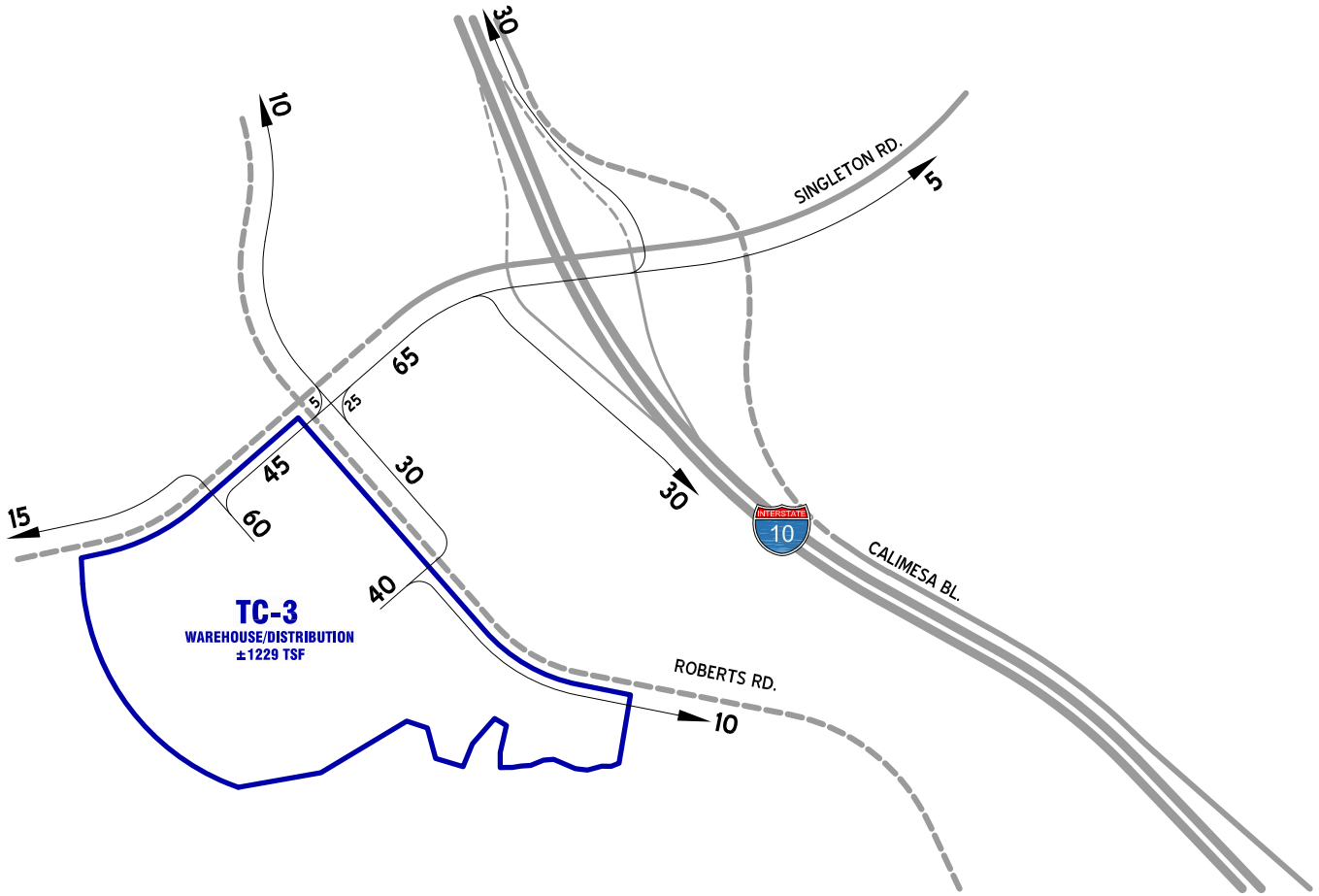
EXHIBIT 6: TC-3 PROJECT TRIP DISTRIBUTION



LEGEND:

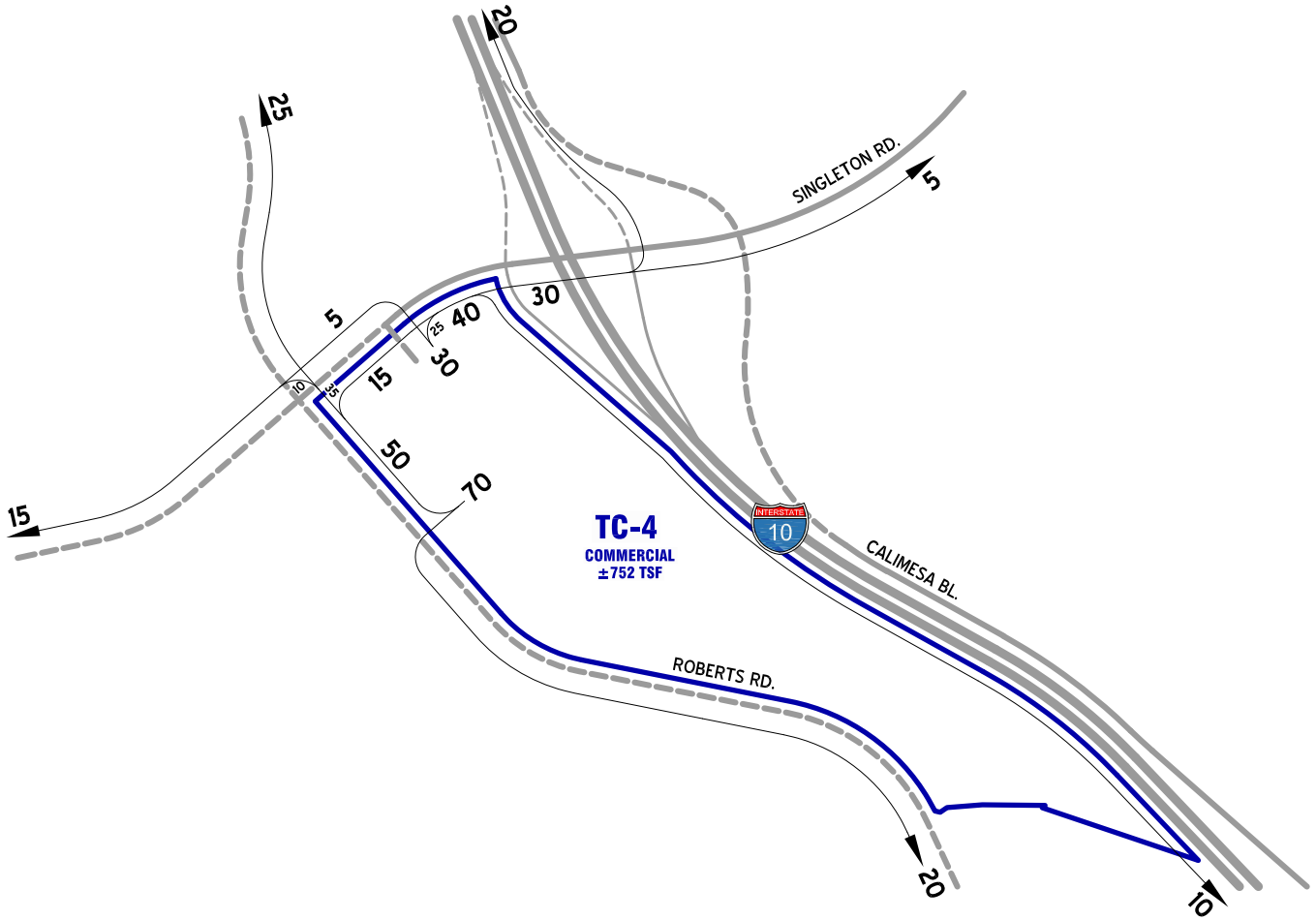
TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 7: TC-4 PROJECT TRIP DISTRIBUTION



LEGEND:

TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

For comparison purposes, Exhibit 8 illustrates the existing study area intersections located near the Project and identifies the current number of through traffic lanes for roadways and intersection traffic controls.

In a separate phasing analysis (Oak Valley Town Center Traffic Phasing Evaluation, (September 28, 2020), Existing Plus Ambient Growth Plus Cumulative development, without and with Project land uses, are examined for each of the following phases:

- Project Phase 1 (2022)
- Project Phase 2 (2024)
- Project Phase 3 (2026)
- Project Buildout (Phase 4, 2030)

The September 28, 2020 phasing analysis identifies cumulative future network connections and lane improvements for each project development phase in order to maintain acceptable traffic service levels in the study area.

GENERAL PLAN CIRCULATION ELEMENT

Exhibit 9 shows the City of Calimesa General Plan Circulation Element roadway designation in the study area. Singleton Rd., between Roberts Road and I-10 EB Ramps, is classified as an Urban Arterial which can accommodate six travel lanes, separated by a raised or painted median. Exhibit 10 documents the City of Calimesa General Plan roadway cross-sections.

Roberts Road (realigned roadway) and Singleton Rd., west of Roberts Road are classified as Arterial highways (four travel lanes separated by a median) on the City's General Plan Circulation Element:

Within the project area, there is a Major roadway segment shown south of Singleton Road and west of Roberts Road, located between TAZs P and Q in the 2005 Summerwind traffic analysis. The Project includes a westerly realignment of Roberts Road on site which negates the need for the parallel Major roadway segment as previously planned. The Project alignment of Roberts Road provides appropriate capacity and connectivity in the project area, south of Singleton Road and west of the I-10 Freeway, without an added parallel facility.

Calimesa Boulevard and Singleton Road east of the I-10 Eastbound Ramps are classified as Major Arterials (four to six travel laves with center left turn lane) on the City's General Plan Circulation Element. These facilities typically provide access between the regional highway system and secondary streets.

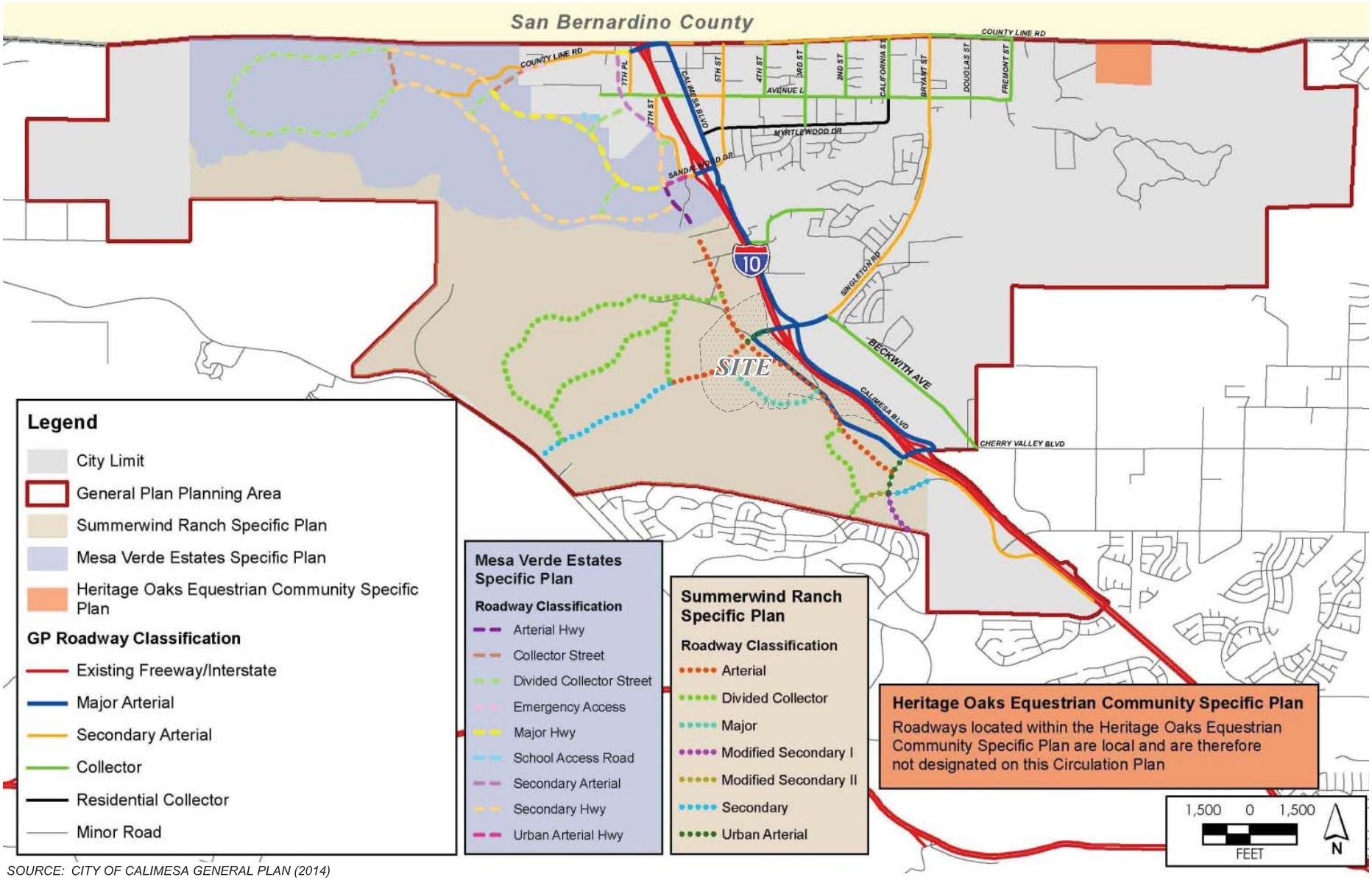
GENERAL PLAN BUILDOUT CONDITIONS

Exhibits 11 and 12 show the weekday AM and PM peak hour intersection turning movement volumes for General Plan with Summerwind traffic conditions. Average Daily Traffic (ADT) volumes for General

EXHIBIT 8: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



EXHIBIT 9: CITY OF CALIMESA GENERAL PLAN CIRCULATION ELEMENT



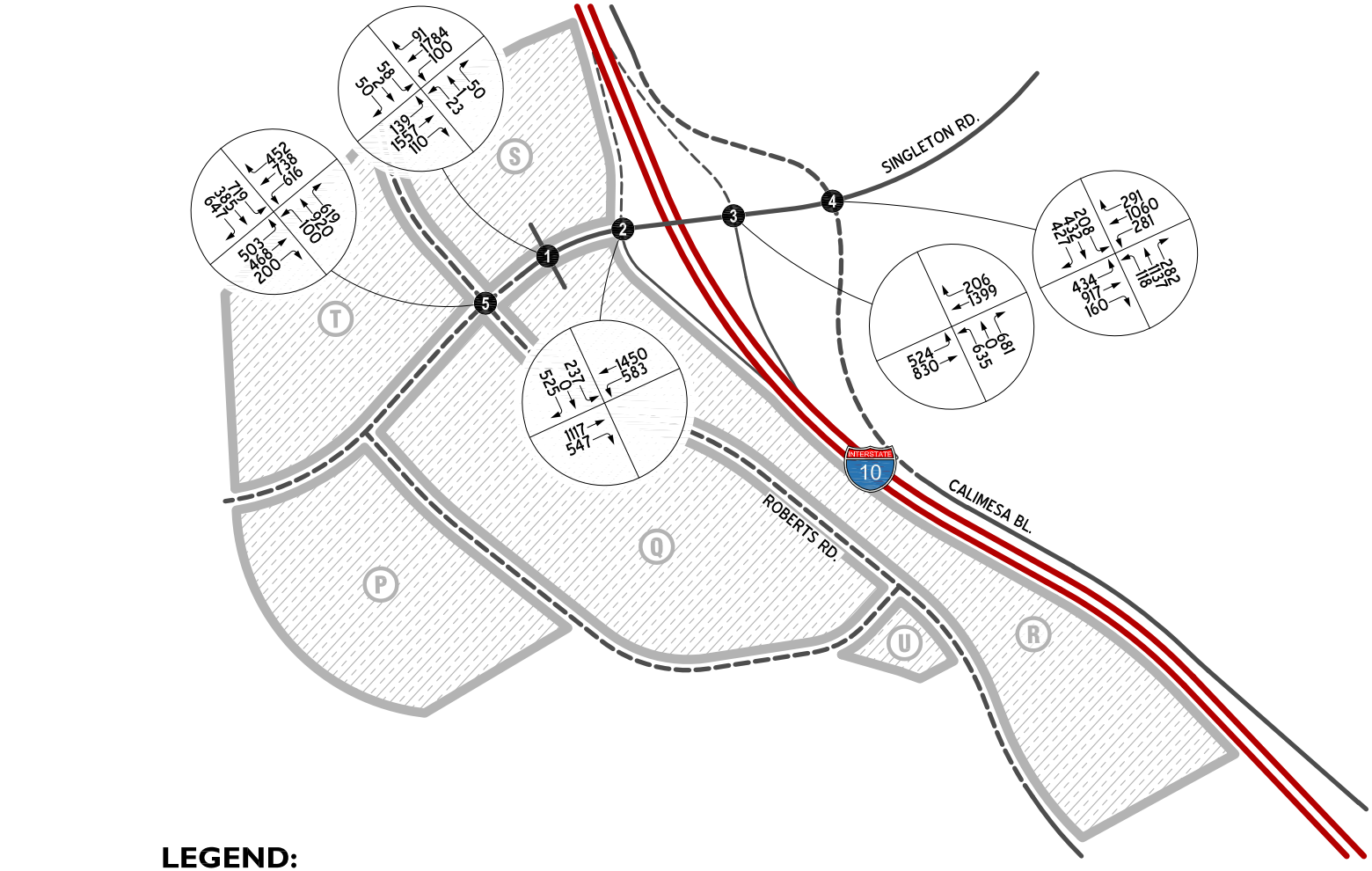
SOURCE: CITY OF CALIMESA GENERAL PLAN (2014)

EXHIBIT 10: CITY OF CALIMESA GENERAL PLAN ROADWAY CROSS-SECTIONS

Roadway Classification	Number of Lanes	Right-of-Way Width	Curb-to-Curb Width
Residential Collector These roadways would provide a 40-foot curb-to-curb roadway within a 52-foot right-of-way. This functional classification is similar to a local street classification, although it would generally have less fronting land uses than a purely local street and would also function as a connection for a limited number of local trips to the arterial system.	2	52 feet	40 feet
Collector These streets would provide a 40-foot curb-to-curb roadway within a 52-foot right-of-way. This is sufficient to provide one lane in each direction with parking. Collector streets function as feeder routes to carry traffic from the arterial system to the local system, but should carry only very minimal levels of non-local through traffic.	2	52 feet	40 feet
Secondary Arterial These roadways would provide a 72-foot curb-to-curb roadway within an 88-foot right-of-way. This is sufficient width to provide two through lanes in each direction (plus a center left turn lane) without parking, or one lane in each direction (plus a center left turn lane) with parking. Secondary arterials would function in a similar manner to major arterials except that secondary arterials carry less total traffic, less non-local through traffic, and a relatively greater proportion of local traffic. Secondary arterials are typically spaced at half-mile intervals between major arterials, or, where appropriate, depending on geographic and land use conditions.	2-4 plus center turn lane	88 feet	72 feet
Major Arterial These roadways would provide a 76-foot curb-to-curb roadway within a 92-foot right-of-way upon full buildout. This is sufficient width to provide three lanes in each direction (plus a center left turn lane) without curbside parking, or two lanes in each direction (plus a center left turn lane) with curbside parking.	4-6 plus center turn lane	92 feet	76 feet
Specific Plan Streets These are defined as streets in an area to be covered in the future by a specific plan. The exact alignment, width and right-of-way of specific plan streets are not specified at this time, but will be determined based upon more detailed studies of proposed land use patterns and anticipated traffic volumes once the development plans are more fully described.	Varies; see Specific Plan for details.	Varies; see Specific Plan for details.	Varies; see Specific Plan for details.

SOURCE: CITY OF CALIMESA GENERAL PLAN (2014)

EXHIBIT 11: APPROVED SUMMERWIND RANCH SP
GENERAL PLAN BUILDOUT AM PEAK HOUR INTERSECTION VOLUMES



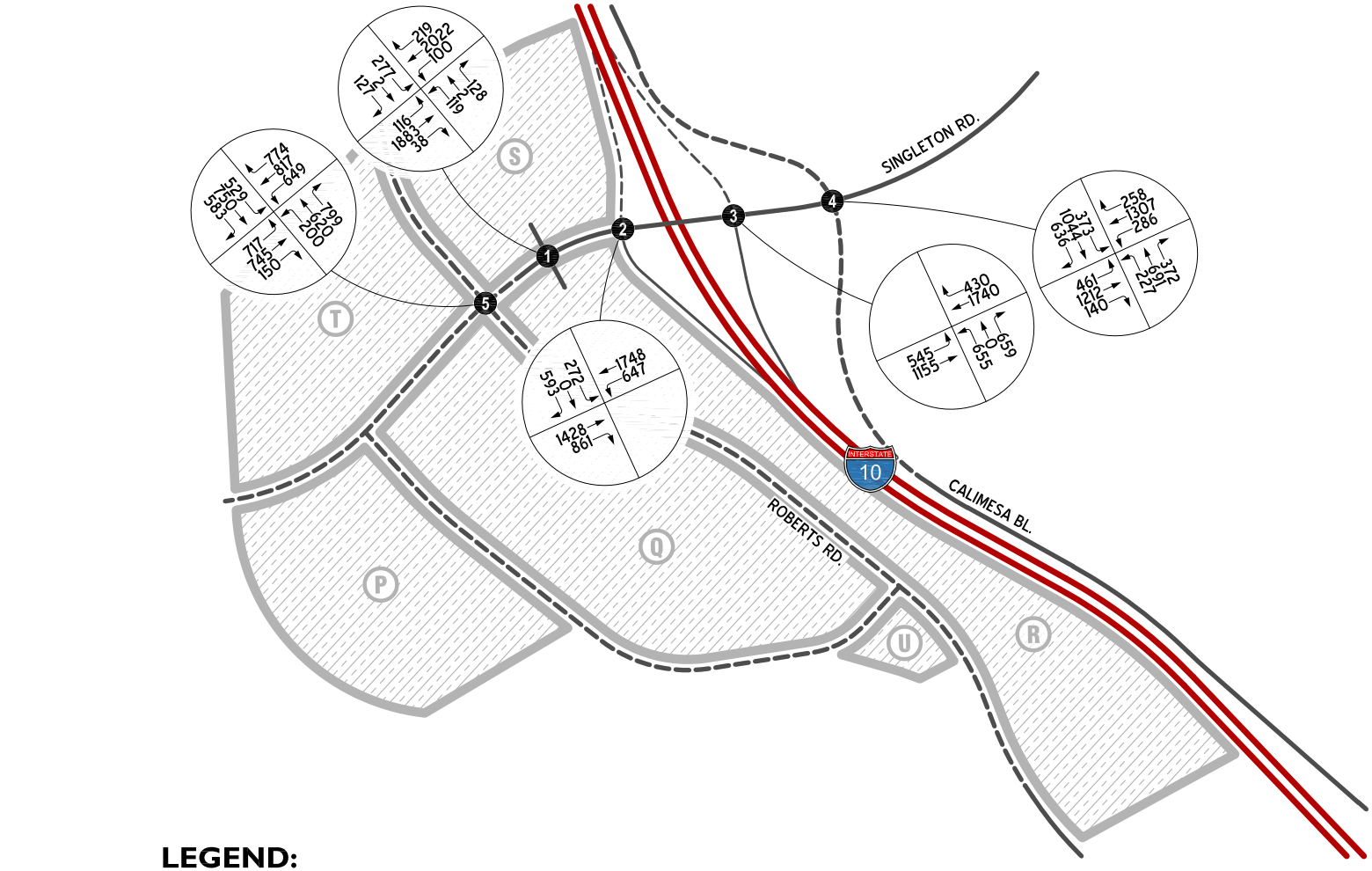
LEGEND:

P = APPROVED SUMMERWIND RANCH SP TAZ

= 2005 TIA ROADWAY ALIGNMENT

N

EXHIBIT 12: APPROVED SUMMERWIND RANCH SP
CITY GENERAL PLAN BUILDOUT PM PEAK HOUR INTERSECTION VOLUMES



LEGEND:

P = APPROVED SUMMERWIND RANCH SP TAZ

= 2005 TIA ROADWAY ALIGNMENT

N

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Plan with Summerwind are shown on Exhibit 13, based upon the Summerwind Ranch Traffic Impact Analysis (March 2, 2005).

Table 6 provides the General Plan with Summerwind intersection LOS results based upon the 2005 analysis.

Adjacent intersections were anticipated to experience acceptable operations for General Plan with Summerwind conditions, with recommended lane configurations and traffic controls as illustrated on Exhibit 14.

Estimated General Plan volumes with adjustments for the current Project are shown on Exhibits 15 and 16 for morning and evening peak hour conditions, respectively. Average Daily Traffic (ADT) volumes for General Plan Buildout with current Project are shown on Exhibit 17.

Exhibits 18 and 19 show the weekday AM and PM peak hour intersection turning movement volume adjustments associated with the proposed Oak Valley Town Center in comparison to the approved Summerwind Ranch land uses and network. For General Plan buildout conditions, the average daily traffic (ADT) volume adjustments associated with the Project are shown on Exhibit 20. These volume adjustments were developed based on the changes in trip generation presented in Table 5 and modified trip distribution shown previously on Exhibits 4 through 7.

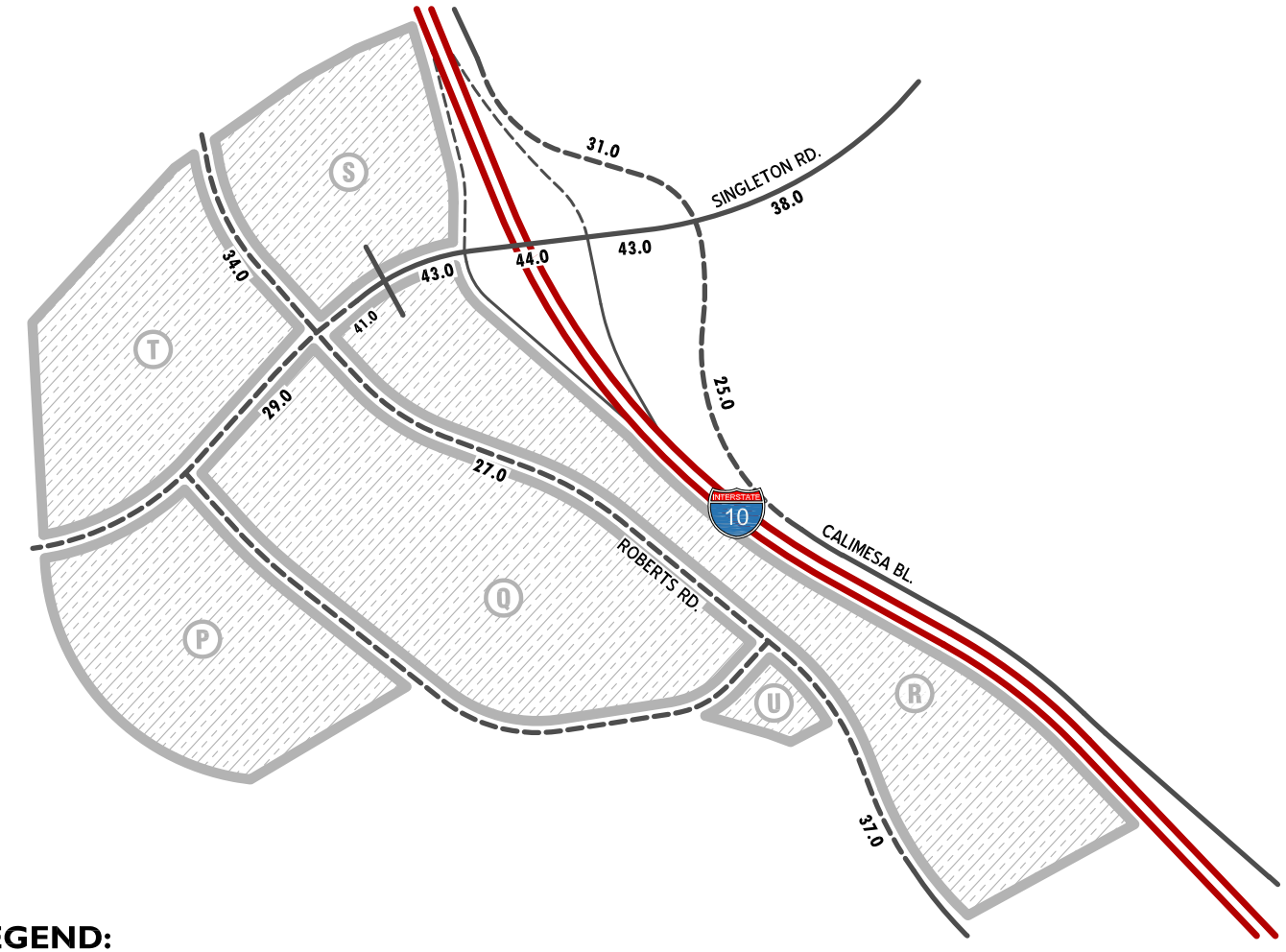
Table 7 provides the General Plan with Project intersection LOS results based upon AM and PM peak hour intersection turning movement volume adjustments to the approved Summerwind Ranch land uses and network. As shown on Table 7, the Project-related volume changes do not change the LOS findings of the 2005 analysis.

Study intersections are anticipated to experience acceptable operations for General Plan with Project conditions, with lane configurations and traffic controls depicted on Exhibit 21. The intersection operations analysis worksheets are included in Attachment 1.

With the Project land plan and network features, the following adjustments in previous travel lane configurations may occur at the discretion of the City:

1. *At the I-10 Eastbound Ramps/Singleton Road intersection, the 2005 analysis recommended an eastbound channelized free right turn lane. With Project volume changes, an eastbound conventional right turn lane will suffice.*
2. *At the Calimesa Boulevard/Singleton Road intersection, the 2005 analysis recommended three eastbound through travel lanes in addition to an eastbound right turn lane. With Project volume changes, two eastbound through travel lanes (in addition to the eastbound right turn lane) will suffice on the eastbound approach to the intersection.*
3. *At the Roberts Road/Singleton Road intersection, the 2005 analysis recommended a northbound channelized free right turn lane. With Project volume changes, a northbound conventional right turn lane with overlap signal phasing will suffice.*

EXHIBIT 13: APPROVED SUMMERWIND RANCH SP
GENERAL PLAN BUILDOUT AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

P = APPROVED SUMMERWIND RANCH SP TAZ

= 2005 TIA ROADWAY ALIGNMENT

10.0 = VEHICLES PER DAY (1000'S)

N

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URBAN CROSSROADS

TABLE 6: APPROVED SUMMERWIND RANCH INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT TRAFFIC CONDITIONS WITH IMPROVEMENTS[4]

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs)		Level of Service[2]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Woodhouse - Roberts Rd. / Singleton Rd.	**TS**	**1**	1	0	**1**	1	0	**1**	**3**	0	**1**	**3**	**1**	20.0	30.5	B	C
2	I-10 EB Ramps / Singleton Rd.	**TS**	0	0	0	**1**	0	**2**	0	**3**	**1>>**	**2**	**3**	0	18.6	20.7	B	C
3	I-10 WB Ramps / Singleton Rd.	**TS**	**1.5**	0	**1.5**	0	0	0	**2**	**3**	0	0	**3**	**1**	27.2	28.3	C	C
4	Calimesa Bl. / Singleton Rd.	**TS**	**1**	**2**	**1**	**2**	**2**	**1>**	**2**	**3**	**1**	**2**	**3**	**1>**	28.0	34.0	C	C
5	Realigned Roberts Rd. / Singleton Rd.	**TS**	**1**	**2**	**1>>**	**2**	**2**	**1>**	**2**	**2**	**1**	**2**	**3**	**1>>**	32.3	30.0	C	C
6	TC-4 Access / Singleton Rd.		Intersection Does Not Exist															

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control.

[3] TS = Traffic Signal

[4] Source: Summerwind Ranch Traffic Impact Analysis. Prepared by Urban Crossroads, Inc. March 2005.

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EXHIBIT 14: APPROVED SUMMERWIND RANCH SP GENERAL PLAN BUILDOUT RECOMMENDED IMPROVEMENTS

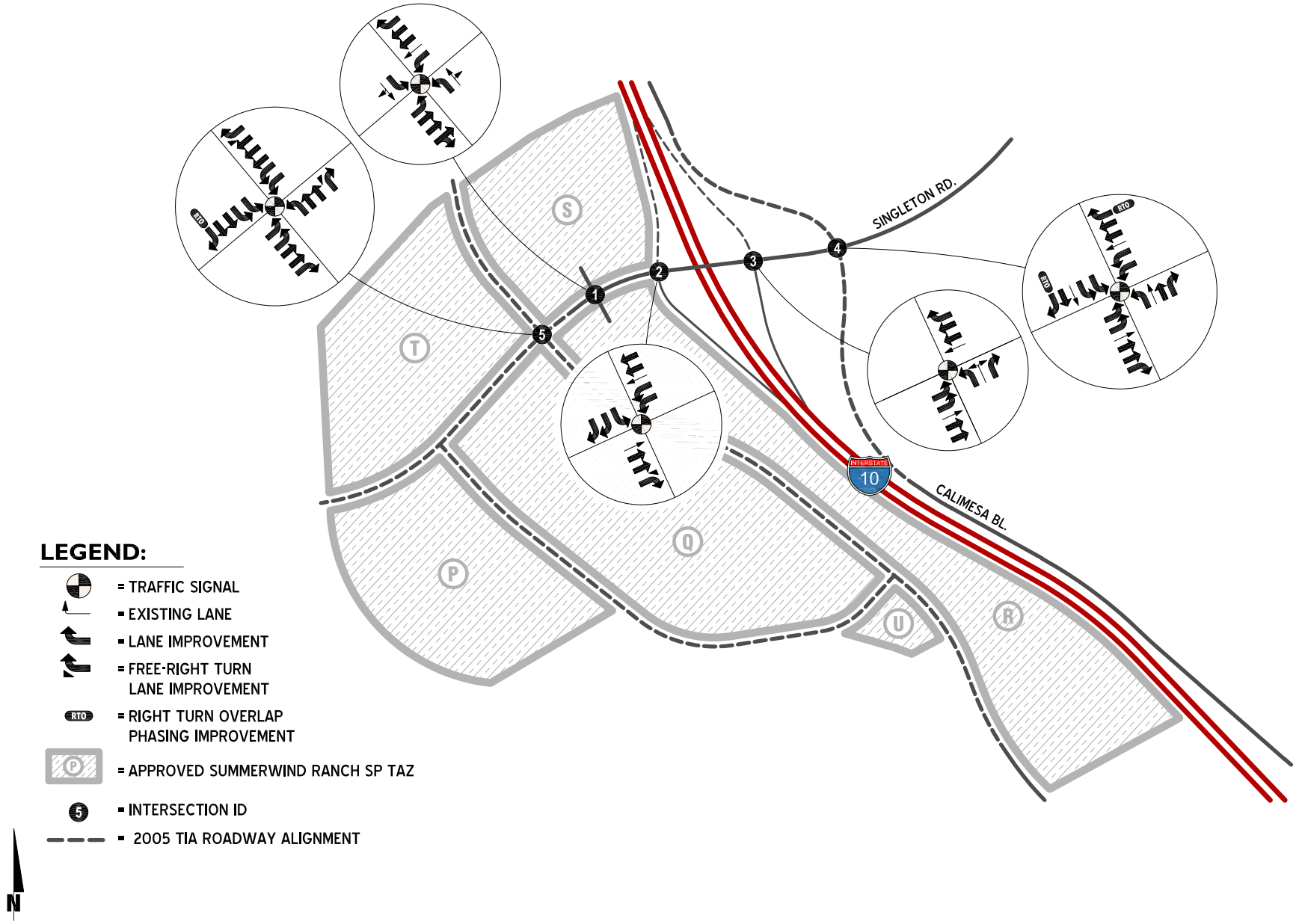


EXHIBIT 15: PROPOSED OAK VALLEY TOWN CENTER
GENERAL PLAN BUILDOUT AM PEAK HOUR INTERSECTION VOLUMES

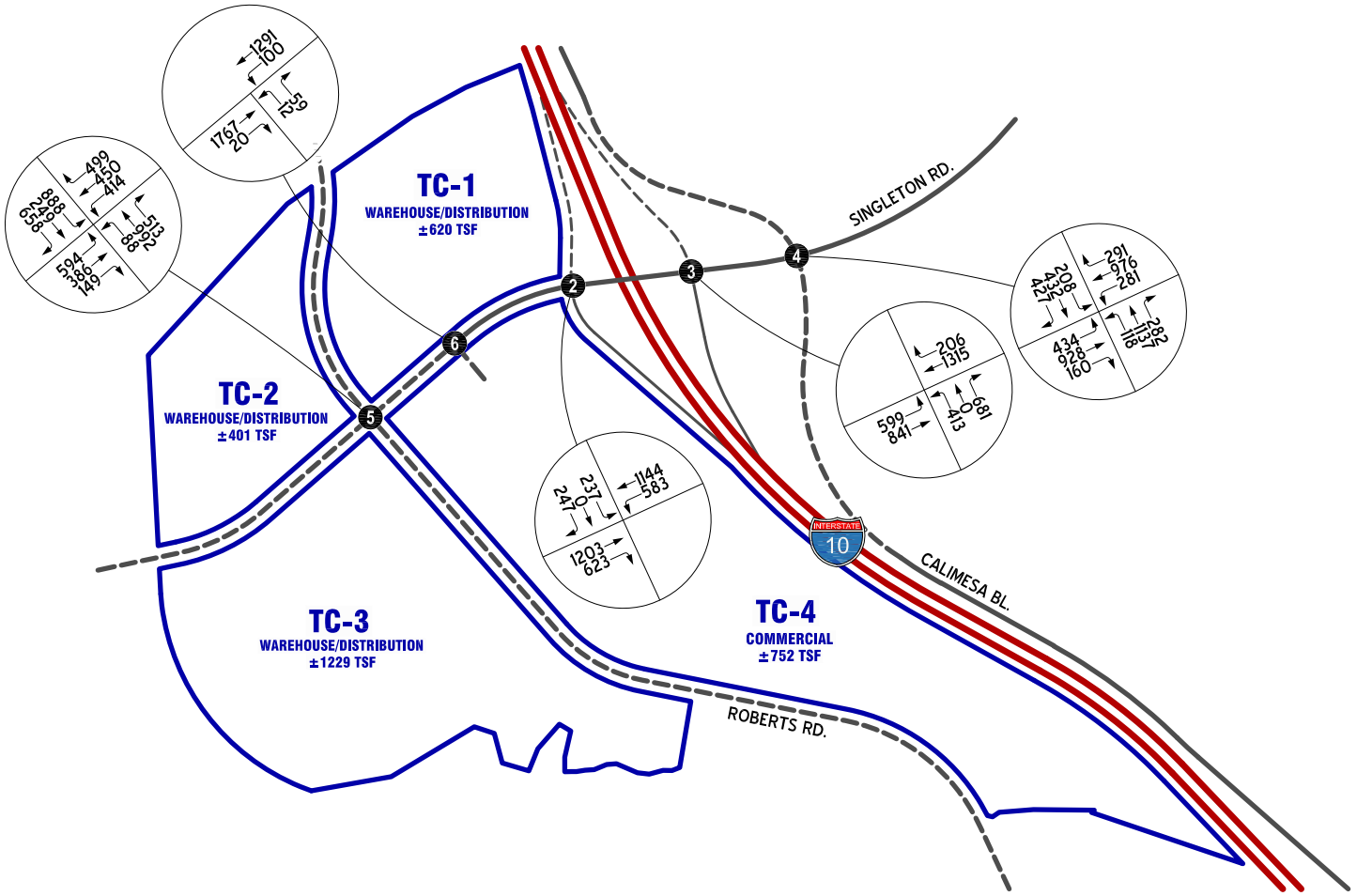
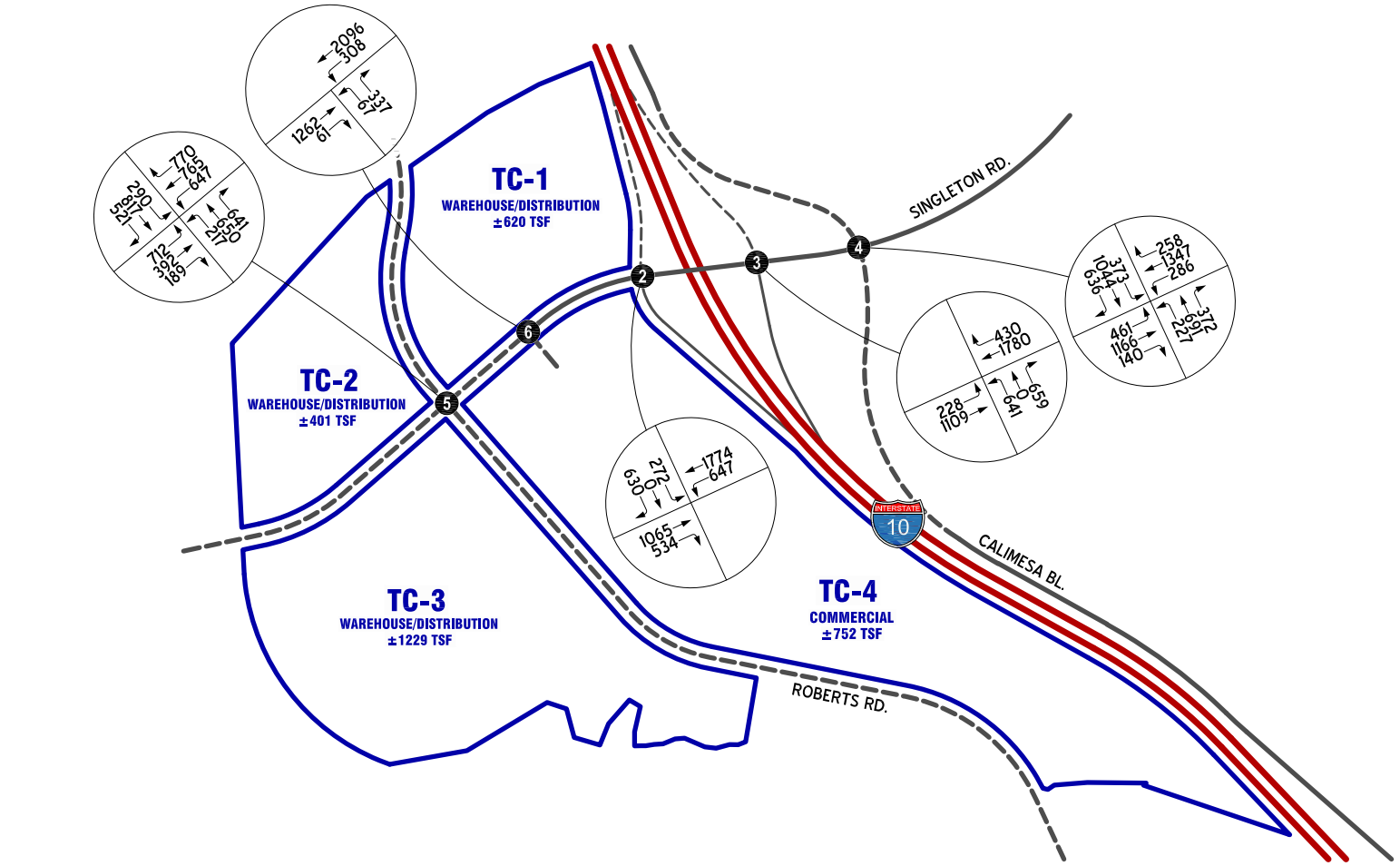


EXHIBIT 16: PROPOSED OAK VALLEY TOWN CENTER
GENERAL PLAN BUILDOUT PM PEAK HOUR INTERSECTION VOLUMES



LEGEND:

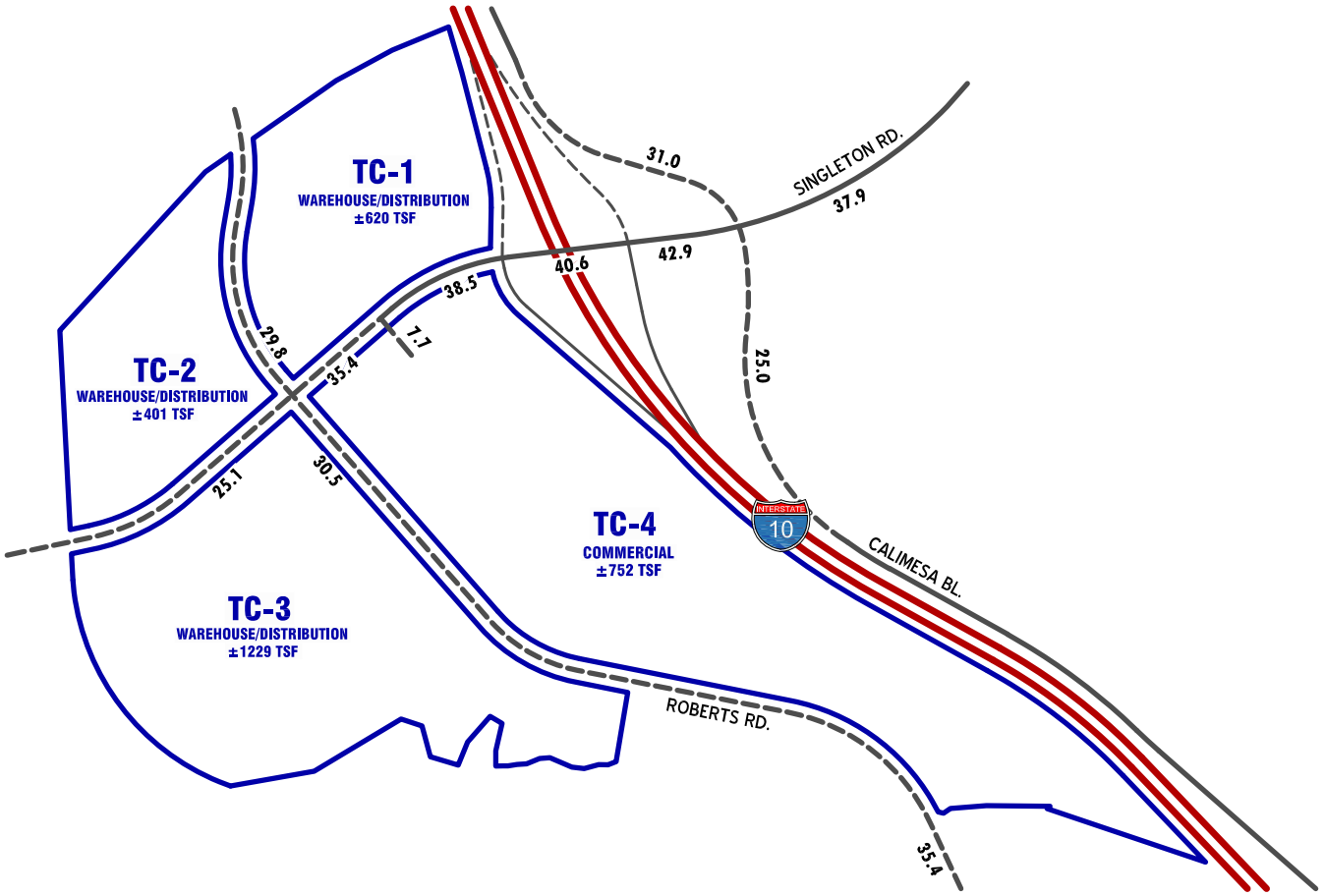
TC-1 = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

6 = INTERSECTION ID

= REALIGNMENT/FUTURE ROADWAY

N

EXHIBIT 17: PROPOSED OAK VALLEY TOWN CENTER GENERAL PLAN BUILDOUT AVERAGE DAILY TRAFFIC (ADT)



LEGEND:

TC-1 = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10.0 = VEHICLES PER DAY (1000'S)

N

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URBAN CROSSROADS

EXHIBIT 18: GENERAL PLAN BUILDOUT
AM PEAK HOUR INTERSECTION VOLUME DIFFERENCES
(PROJECT VOLUME CHANGES, COMPARED TO SUMMERWIND 2005 ANALYSIS)

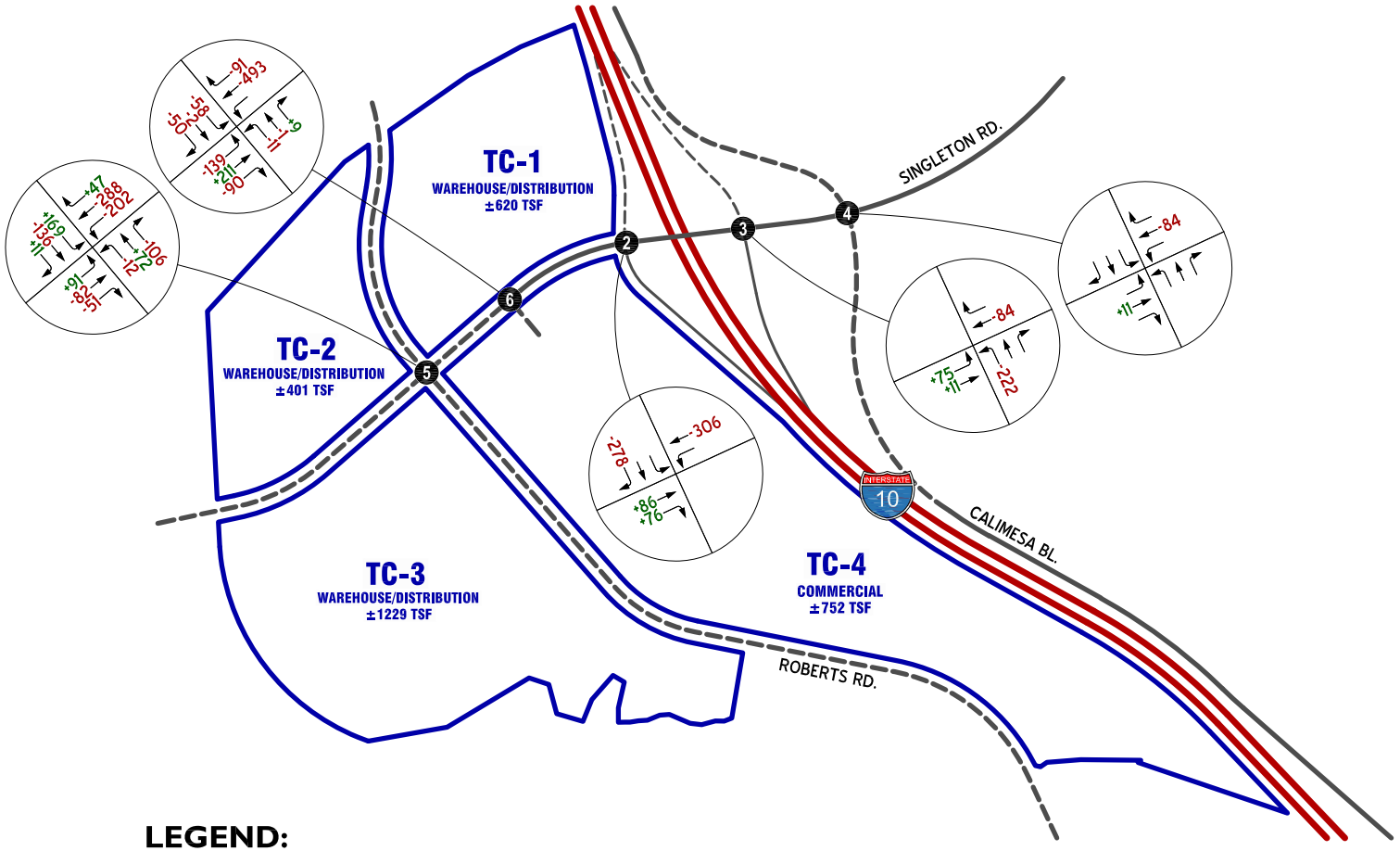


EXHIBIT 19: GENERAL PLAN BUILDOUT
PM PEAK HOUR INTERSECTION VOLUME DIFFERENCES
(PROJECT VOLUME CHANGES, COMPARED TO SUMMERWIND 2005 ANALYSIS)

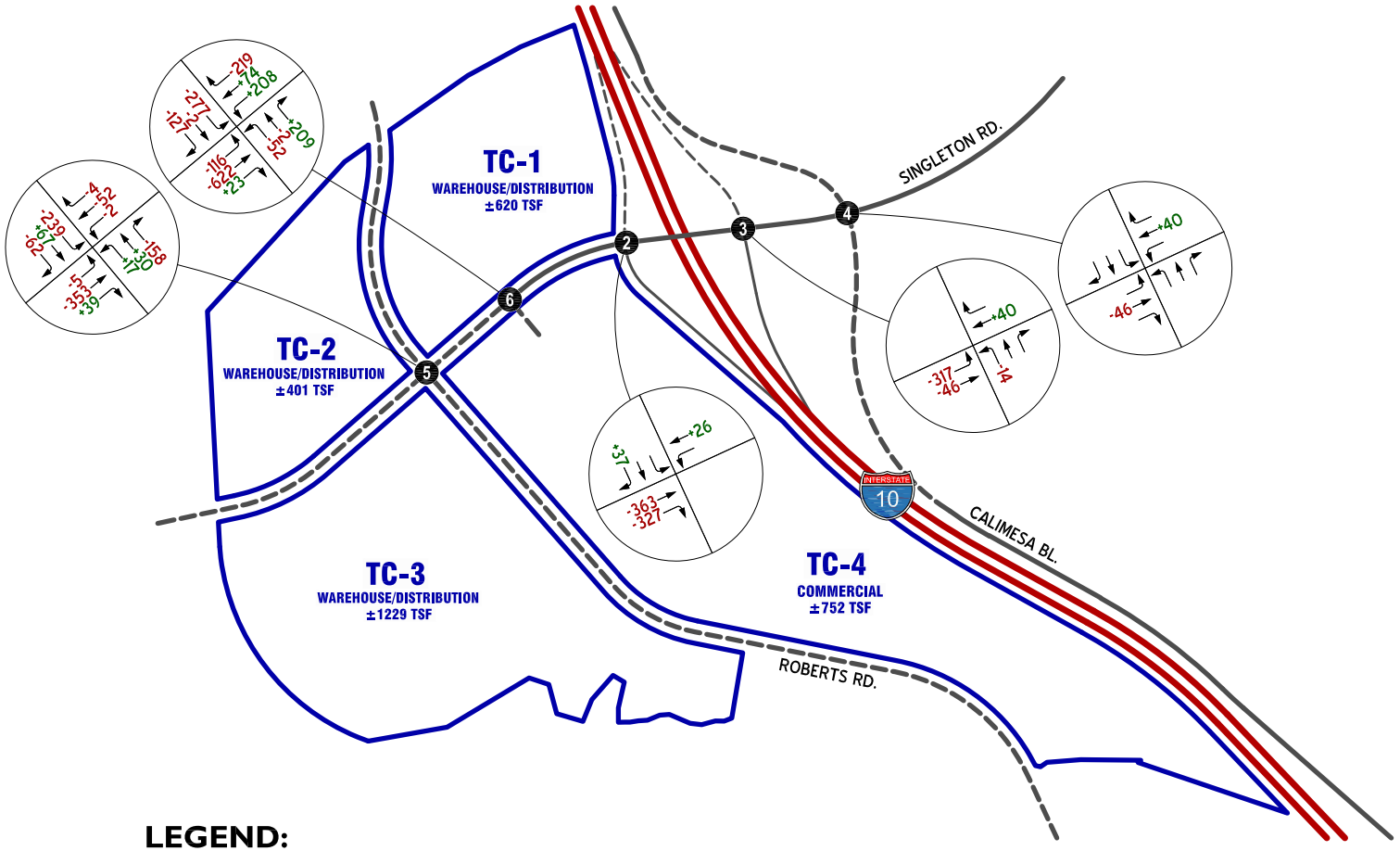
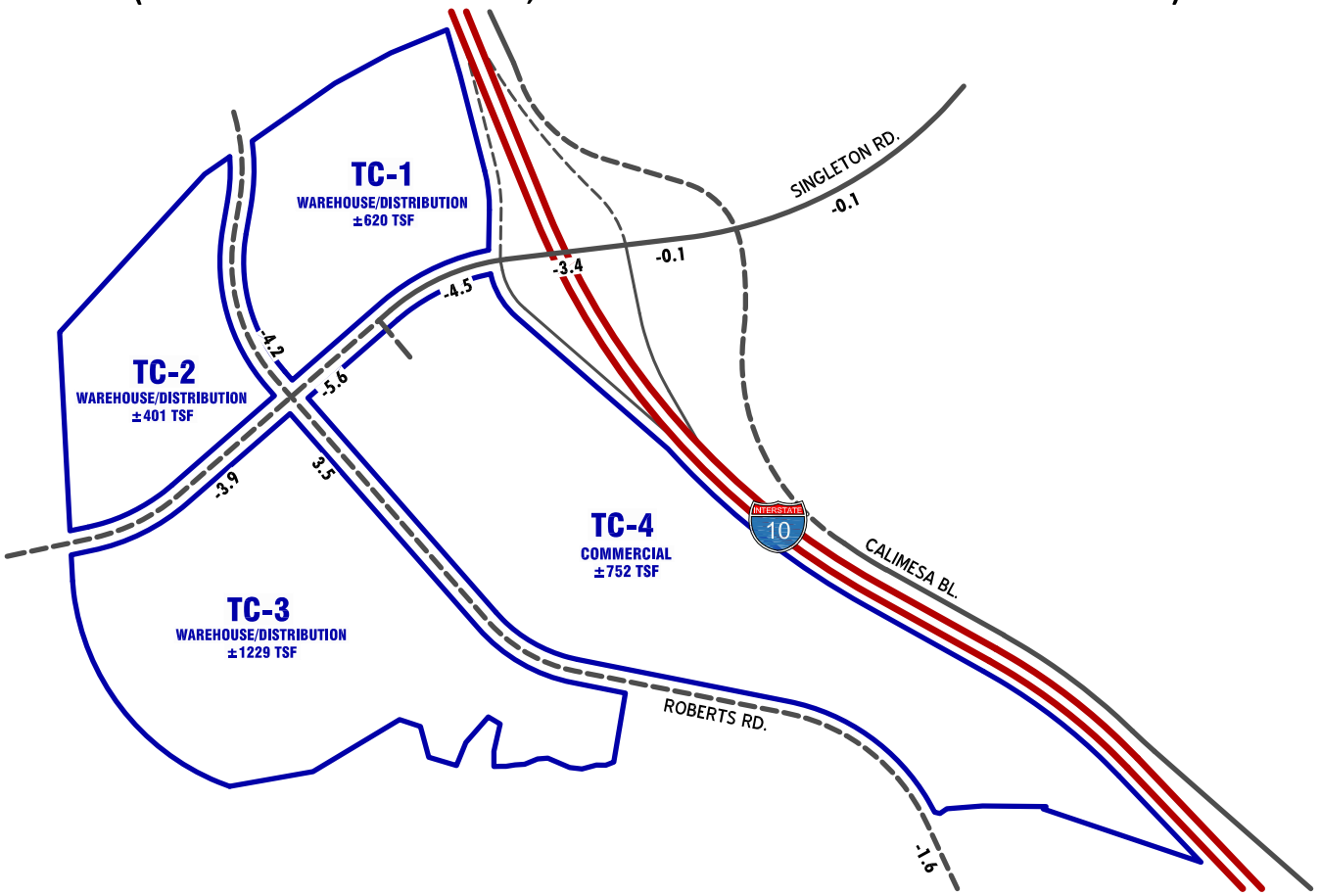


EXHIBIT 20: GENERAL PLAN BUILDOUT
AVERAGE DAILY TRAFFIC (ADT) VOLUME DIFFERENCES
(PROJECT VOLUME CHANGES, COMPARED TO SUMMERWIND 2005 ANALYSIS)



LEGEND:

TC-1 = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

+10 = VEHICLES PER DAY (1000'S) INCREASE ASSOCIATED WITH PROPOSED OAK VALLEY TOWN CENTER PROJECT IN COMPARISON TO SUMMERWIND 2005 ANALYSIS

-10 = VEHICLES PER DAY (1000'S) DECREASE ASSOCIATED WITH PROPOSED OAK VALLEY TOWN CENTER PROJECT IN COMPARISON TO SUMMERWIND 2005 ANALYSIS

N

TABLE 7: OAK VALLEY TOWN CENTER INTERSECTION ANALYSIS FOR GENERAL PLAN BUILDOUT TRAFFIC CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs)		Level of Service[2]	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
2	I-10 EB Ramps / Singleton Rd.	**TS**	0	0	0	**1**	0	**2**	0	**3**	***1***	**2**	**3**	0	18.0	22.7	B	C
3	I-10 WB Ramps / Singleton Rd.	**TS**	**1.5**	0	**1.5**	0	0	0	**2**	**3**	0	0	**3**	**1**	21.3	22.0	C	C
4	Calimesa Bl. / Singleton Rd.	**TS**	**1**	**2**	**1**	**2**	**2**	**1>**	**2**	***2***	**1**	**2**	**3**	**1>**	29.0	34.9	C	C
5	Realigned Roberts Rd. / Singleton Rd.	**TS**	**1**	**2**	***1>***	**2**	**2**	**1>**	**2**	**2**	**1**	**2**	**3**	**1>>**	32.5	24.9	C	C
6	TC-4 Access / Singleton Rd.	**TS**	**1**	0	**1**	***0***	***0***	0	***0***	**3**	0	***2***	**3**	***0***	7.6	16.9	A	B

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; >> = Free-Right Turn Lane;

1 = Improvement ; ***1*** = Revised improvement (lane reduction or reconfiguration) in comparison to Summerwind 2015 TIA

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control.

[3] TS = Traffic Signal

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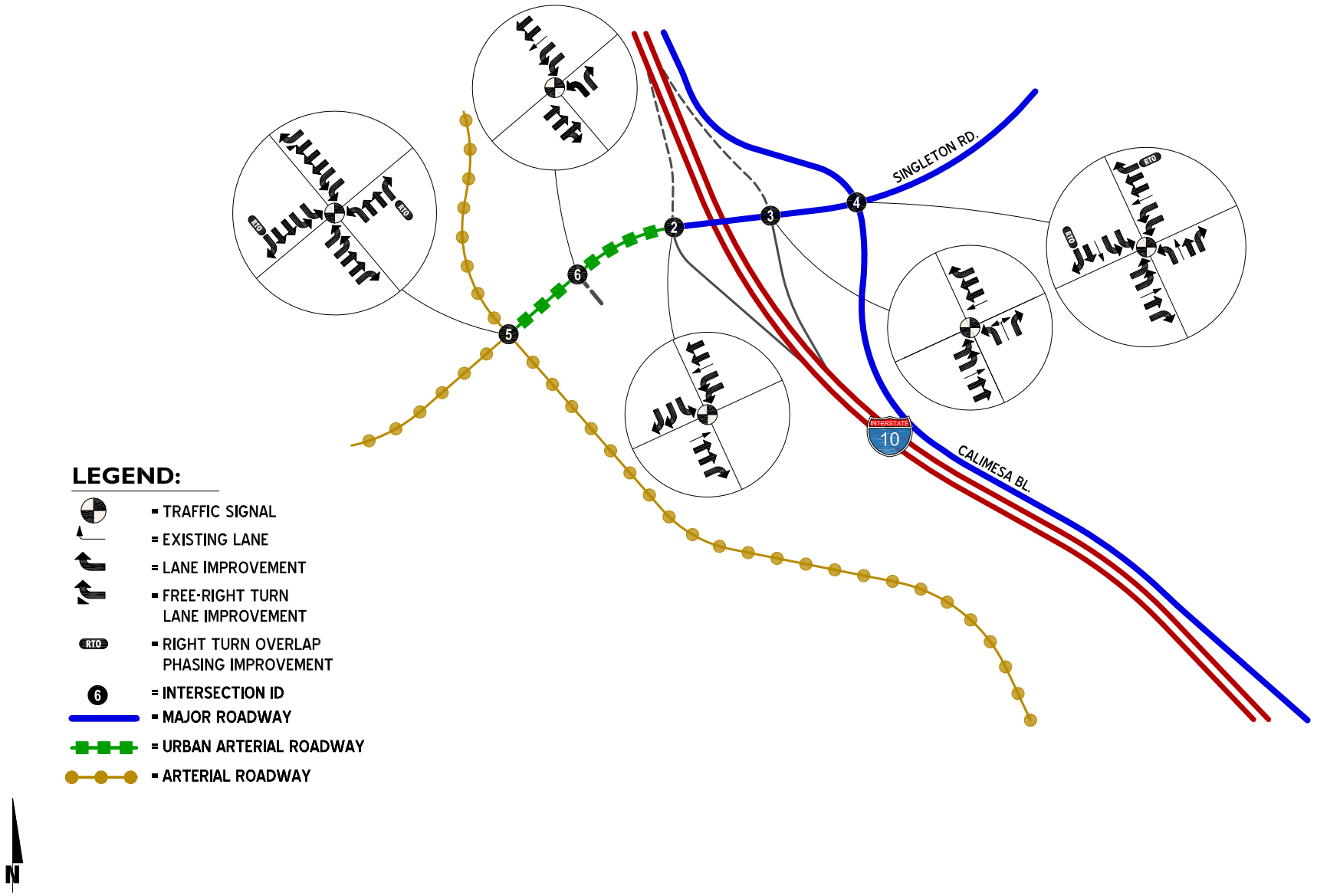
EXHIBIT 21: PROPOSED OAK VALLEY TOWN CENTER GENERAL PLAN BUILDOUT RECOMMENDED IMPROVEMENTS



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4. *At the TC-4 Access/Singleton Road intersection, the 2005 analysis included a north leg to the intersection, as well as a single westbound left turn lane. With Project volume changes and site access as presented in a recent illustrative plan, the north leg of this intersection is eliminated, and dual westbound left turn lanes are recommended.*

FAIR SHARE ANALYSIS

Table 8 provides the Project fair share percentage calculations for the immediate project area intersections with the proposed Oak Valley Town Center project, based upon the methodology utilized in the 2005 analysis. As indicated on Table 8, the proposed Oak Valley Town Center Project is expected to contribute between 14.9% and 37.9% of new traffic to the focused study area intersections. As site plans for parcels within the project area are developed in the future, detailed assessments of site access improvements will be needed.

With the proposed Oak Valley Town Center, an apples-to-apples comparison of long range conditions indicates that the Project fair share is reduced by 0.1% to 8.2% in comparison to the 2005 analysis.

Table 9 provides the updated Project fair share percentage roadway segment calculations for the Non-TUMF locations identified in Table 7-2 of the Summerwind Ranch Traffic Impact Analysis (March 2, 2005). As shown on Table 9, the proposed Oak Valley Town Center Project is expected to contribute between 0.6% and 78.5% of new traffic to the Non-TUMF segment locations.

Table 10 provides the cost estimates for the Non-TUMF locations identified in Table 9. As shown in Table 10, the proposed Oak Valley Town Center rough order of magnitude cost estimate for Non-TUMF locations amounts to $3,454,114.

LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Calimesa are funded through a combination of direct project mitigation, fair share contributions, and development impact fee programs such as the City of Calimesa Development Impact Fee (DIF) program. Identification and timing of needed improvements is based upon a variety of factors.

Transportation Uniform Mitigation Fee (TUMF) Program

The TUMF program is administered by the WRCOG based upon a regional Nexus Study most recently updated in 2017 to address major changes in right of way acquisition and improvement cost factors. This regional program was put into place to ensure that development pays its fair share and that funding is in place for construction of facilities needed to maintain the requisite level of service and critical to mobility in the region. TUMF is a truly regional mitigation fee program and is imposed and implemented in every jurisdiction in Western Riverside County.

TABLE 8: FAIR SHARE CALCULATIONS, IMMEDIATE PROJECT AREA

ID	Intersection	Previous Summerwind Ranch Town Center[1]			Proposed Oak Valley Town Center				Project Fair Share Delta (%)[6]
		Total New Traffic[2]	Project Only Traffic	Project Fair Share (%)[3]	Oak Valley Town Center Project Adjustments[4]	Total New Traffic[5]	Project Only Traffic	Project Fair Share (%)[3]	
2	I-10 EB Ramps / Singleton Rd.								
	• AM Peak Hour	3,532	1,377	39.0%	-422	3,110	955	30.7%	-8.3%
	• PM Peak Hour	4,738	2,184	**46.1%**	-627	4,111	1,557	**37.9%**	**-8.2%**
3	I-10 WB Ramps / Singleton Rd.								
	• AM Peak Hour	2,823	836	29.6%	-220	2,603	616	23.7%	-5.9%
	• PM Peak Hour	3,840	1,350	**35.2%**	-337	3,503	1,013	**28.9%**	**-6.3%**
4	Calimesa Bl. / Singleton Rd.								
	• AM Peak Hour	2,526	295	11.7%	-73	2,453	222	9.1%	-2.6%
	• PM Peak Hour	3,435	516	**15.0%**	-6	3,429	510	**14.9%**	**-0.1%**
5	Roberts Rd. / Singleton Rd.								
	• AM Peak Hour	5,085	1,934	38.0%	-487	4,598	1,447	31.5%	-6.5%
	• PM Peak Hour	6,264	2,749	**43.9%**	-722	5,542	2,027	**36.6%**	**-7.3%**

[1] Source: Summerwind Ranch Traffic Impact Analysis. Prepared by Urban Crossroads, Inc. March 2005.

[2] Total New Traffic = (2030 Traffic- Existing Traffic)

[3] Project Fair Share % = (Project Only Traffic / Total New Traffic)

[4] The peak hour volume adjustments are shown on Exhibits 18 and 19.

[5] Total New Traffic = (Previous Summerwind Ranch Town Center Total New Traffic + Oak Valley Town Center Project Adjustments)

[6] Project Fair Share Delta % = (Proposed Oak Valley Town Center Project Fair Share % - Previous Summerwind Ranch Town Center Project Fair Share %)

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TABLE 9: FAIR SHARE CALCULATIONS OF NON-TUMF TRANSPORTATION PROGRAM (SCENARIO B)

Facility	Limits	Previous Summerwind Ranch Town Center[1]			Proposed Oak Valley Town Center				Project Fair Share Delta (%)[5]
		Total New Traffic[2]	Project Only Traffic	Project Fair Share (%)[3]	Oak Valley Town Center Project Adjustments[6]	Total New Traffic[4]	Project Only Traffic	Project Fair Share (%)[3]	
Cherry Valley Bl.	Desert Lawn Dr. to Roberts Rd.								
• AM Peak Hour		2,680	46	1.7%	NC	2,680	46	1.7%	NOM
• PMPeak Hour		3,463	187	**5.4%**	40	3,503	227	**6.5%**	**1.1%**
Roberts Rd.	Sandalwood Dr. to "C" St.								
• AM Peak Hour		2,825	210	7.4%	-177	2,648	33	1.2%	-6.2%
• PM Peak Hour		3,305	310	**9.4%**	-148	3,157	162	**5.1%**	**-4.3%**
Roberts Rd.	"C" St. to Singleton Rd.								
• AM Peak Hour		2,865	447	15.6%	-220	2,645	227	8.6%	-7.0%
• PM Peak Hour		3,221	571	**17.7%**	-254	2,967	317	**10.7%**	**-7.0%**
Roberts Rd.	Singleton Rd. to TC-3 & TC-4 Dwy.								
• AM Peak Hour		1,745	1,004	57.5%	-435	1,310	569	43.4%	-14.1%
• PM Peak Hour		2,503	1,702	**68.0%**	-7	2,496	1,695	**67.9%**	**-0.1%**
Roberts Rd.	TC-3 & TC-4 Dwy. to Cherry Valley Bl.								
• AM Peak Hour		578	175	30.3%	5	583	180	30.9%	0.6%
• PM Peak Hour		954	714	**74.8%**	164	1,118	878	**78.5%**	**3.7%**
Sandalwood Dr.	Roberts Rd. to 7th St.								
• AM Peak Hour		2,975	15	0.5%	-5	2,970	10	0.3%	-0.2%
• PM Peak Hour		3,816	52	**1.4%**	-21	3,795	31	**0.8%**	**-0.6%**
Sandalwood Dr.	7th St. to I-10								
• AM Peak Hour		2,828	15	0.5%	-5	2,823	10	0.4%	-0.1%
• PM Peak Hour		3,668	52	**1.4%**	-21	3,647	31	**0.9%**	**-0.5%**
Sandalwood Dr.	I-10 to Calimesa Bl.								
• AM Peak Hour		2,433	6	0.2%	-3	2,430	3	0.1%	-0.1%
• PM Peak Hour		3,139	27	**0.9%**	-9	3,130	18	**0.6%**	**-0.3%**
Singleton Rd.	Roberts Rd. to Woodhouse Rd.								
• AM Peak Hour		3,138	1,330	42.4%	-462	2,676	868	32.4%	-10.0%
• PM Peak Hour		4,024	1,990	**49.5%**	-808	3,216	1,182	**36.8%**	**-12.7%**

[1] Source: Summerwind Ranch Traffic Impact Analysis. Prepared by Urban Crossroads, Inc. March 2005.

[2] Total New Traffic = (2030 Traffic- Existing Traffic)

[3] Project Fair Share % = (Project Only Traffic / Total New Traffic)

[4] Total New Traffic = (Previous Summerwind Ranch Town Center Total New Traffic + Oak Valley Town Center Project Adjustments)

[5] Project Fair Share Delta % = (Proposed Oak Valley Town Center Project Fair Share % - Previous Summerwind Ranch Town Center Project Fair Share %). NOM = Nominal

[6] NC = No Change

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TABLE 10: NON-TUMF TRANSPORTATION PROGRAM (SCENARIO B) COST ESTIMATES

Facility	Limits	Program Cost[1]	Proposed Oak Valley Town Center	
			Fair Share	NON-TUMF
Cherry Valley Boulevard	Desert Lawn Dr. to Roberts Rd.	$ 404,792	6.5%	$ 26,311
Roberts Road	Sandalwood Dr. to "C" St.	$ 2,223,333	5.1%	$ 113,390
Roberts Road	"C" St. to Singleton Rd.	$ 1,317,083	10.7%	$ 140,928
Roberts Road	Singleton Rd. to TC-3 & TC-4 Dwy.	$ 1,027,083	67.9%	$ 697,390
Roberts Road	TC-3 & TC-4 Dwy. to Cherry Valley Bl	$ 2,960,417	78.5%	$ 2,323,927
Sandalwood Drive	Roberts Rd. to 7th St.	$ 280,114	0.8%	$ 2,241
Sandalwood Drive	7th St. to I-10	$ 332,292	0.9%	$ 2,991
Sandalwood Drive	I-10 to Calimesa Bl.	$ 403,199	0.6%	$ 2,419
Singleton Road	Roberts Rd. to Woodhouse Rd.	$ 392,708	36.8%	$ 144,517
TOTAL		**$ 9,341,021**		**$ 3,454,114**

[1] Rough Order of Magnitude estimates based upon $800,000 per lane per mile.

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TUMF fees are imposed on new residential, industrial, and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit stage. In addition, an annual inflation adjustment is considered each year in February. In this way, TUMF fees are adjusted upwards on a regular basis to ensure that the development impact fees collected keep pace with construction and labor costs, etc.

City of Calimesa Development Impact Fee (DIF) Program

The City of Calimesa has created its own local Development Impact Fee (DIF) program to impose and collect fees from new residential, commercial and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The City's DIF includes a Regional Circulation System Fee to comply with Measure "A" and a Local Circulation System Fee to address transportation improvements which are locally significant.

The fee schedule is adjusted annually based upon changes in the construction cost index (CCI). Under the City's DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of implementing the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City.

CONCLUSION

This traffic evaluation documents trip generation, cumulative traffic forecasts and recommended intersection configurations for the Oak Valley Town Center. Refinements to raw trip generation estimates have been made to provide a more detailed breakdown of trips by vehicle mix. Truck trips are converted to passenger-car-equivalent (PCE) trips for the warehousing/distribution buildings associated with the Project.

Project peak hour and daily trip generation estimates are generally lower than the traffic evaluated in the Summerwind Ranch Traffic Impact Analysis (March 2, 2005). When Project volume adjustments and network features are considered, this evaluation concludes that the Project is generally consistent with circulation recommendations in the 2005 analysis, and cumulative future lane improvements are anticipated to perform within acceptable service levels in the study area.

The City of Calimesa will eventually need to update the General Plan Circulation Element map to (1) reflect the alignment of Roberts Road shown on Exhibit 16, and (2) eliminate the on-site Major roadway

segment previously shown between TAZs P and Q in the 2005 Summerwind traffic analysis. Project driveway access provisions for each planning area will be the subject of subsequent site-specific analyses.

If you have any questions, please contact John Kain at (949) 336-5990 or Marlie Whiteman (949) 336-5991.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain

John Kain, AICP
Principal

Marlie Whiteman

Marlie Whiteman, PE
Senior Associate

Attachments

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ATTACHMENT 1:

PROPOSED OAK VALLEY TOWN CENTER GENERAL PLAN BUILDOUT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 (#2) - I-10 EB Ramps / Singleton Rd.

Cycle (sec):	65	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	12	Average Delay (sec/veh):	18.0
Optimal Cycle:	OPTIMIZED	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	10	0	10	0	10	10	10	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	0 0	1 0	0	0 2	0 0	3	0 1	2 0	3	0 0
Volume Module:												
Base Vol:	0	0	0	237	0	247	0	1203	623	583	1144	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	237	0	247	0	1203	623	583	1144	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	237	0	247	0	1203	623	583	1144	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	237	0	247	0	1203	623	583	1144	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	237	0	247	0	1203	623	583	1144	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.75	1.00	0.91	0.85	0.92	0.91	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	2.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	1805	0	2842	0	5187	1615	3502	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.09	0.00	0.23	0.39	0.17	0.22	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.16	0.00	0.16	0.00	0.46	0.46	0.20	0.66	0.00
Volume/Cap:	0.00	0.00	0.00	0.84	0.00	0.55	0.00	0.50	0.84	0.84	0.33	0.00
Delay/Veh:	0.0	0.0	0.0	46.0	0.0	26.9	0.0	12.5	23.8	33.9	4.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	46.0	0.0	26.9	0.0	12.5	23.8	33.9	4.9	0.0
LOS by Move:	A	A	A	D	A	C	A	B	C	C	A	A
HCM2kAvgQ:	0	0	0	7	0	3	0	6	12	6	3	0

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 (#3) - I-10 WB Ramps / Singleton Rd.

Cycle (sec):	60	Critical Vol./Cap.(X):	0.841
Loss Time (sec):	12	Average Delay (sec/veh):	21.3
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	0	10	0	0	0	10	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	2	0	3	0	0	0	0	3	0	1
Volume Module:												
Base Vol:	413	0	681	0	0	0	599	841	0	0	1315	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	413	0	681	0	0	0	599	841	0	0	1315	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	413	0	681	0	0	0	599	841	0	0	1315	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	413	0	681	0	0	0	599	841	0	0	1315	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	413	0	681	0	0	0	599	841	0	0	1315	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	0.92	0.91	1.00	1.00	0.91	0.85
Lanes:	1.38	0.00	1.62	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	2329	0	2743	0	0	0	3502	5187	0	0	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.25	0.00	0.00	0.00	0.17	0.16	0.00	0.00	0.25	0.13
Crit Moves:			****				****				****	
Green/Cycle:	0.30	0.00	0.30	0.00	0.00	0.00	0.20	0.50	0.00	0.00	0.30	0.30
Volume/Cap:	0.60	0.00	0.84	0.00	0.00	0.00	0.84	0.32	0.00	0.00	0.84	0.42
Delay/Veh:	18.7	0.0	24.9	0.0	0.0	0.0	31.8	8.9	0.0	0.0	23.9	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.7	0.0	24.9	0.0	0.0	0.0	31.8	8.9	0.0	0.0	23.9	17.4
LOS by Move:	B	A	C	A	A	A	C	A	A	A	C	B
HCM2kAvgQ:	6	0	10	0	0	0	6	3	0	0	9	3

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 (#4) - Calimesa Bl. / Singleton Rd.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	8	Average Delay (sec/veh):	29.0
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	118	1137	282	208	432	427	434	928	160	281	976	291
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	1137	282	208	432	427	434	928	160	281	976	291
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	1137	282	208	432	427	434	928	160	281	976	291
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	1137	282	208	432	427	434	928	160	281	976	291
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	1137	282	208	432	427	434	928	160	281	976	291
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.99	0.85	0.92	0.95	0.85
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	1805	3610	1615	3502	3610	1615	3502	3772	1615	3502	5420	1615
Capacity Analysis Module:												
Vol/Sat:	0.07	0.31	0.17	0.06	0.12	0.26	0.12	0.25	0.10	0.08	0.18	0.18
Crit Moves:		****		****				****		****		
Green/Cycle:	0.24	0.35	0.35	0.13	0.25	0.42	0.17	0.27	0.27	0.13	0.23	0.37
Volume/Cap:	0.28	0.90	0.50	0.45	0.48	0.63	0.71	0.90	0.36	0.60	0.77	0.49
Delay/Veh:	23.8	31.5	19.8	30.6	24.4	18.8	33.2	36.3	22.4	32.8	29.7	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.8	31.5	19.8	30.6	24.4	18.8	33.2	36.3	22.4	32.8	29.7	18.9
LOS by Move:	C	C	B	C	C	B	C	D	C	C	C	B
HCM2kAvgQ:	2	17	6	3	5	9	5	12	3	4	10	6

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 (#5) - Realigned Roberts Rd. / Singleton Rd.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.878
Loss Time (sec):	8	Average Delay (sec/veh):	32.5
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Ovl				Include				Ignore			
Min. Green:	10	10	10		10	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0	1	2	0 2	0	1	2	0 2	0	1	2	0 3	0	1
Volume Module:																
Base Vol:	88	992	513		888	249	658		594	386	149		414	450	499	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	88	992	513		888	249	658		594	386	149		414	450	499	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Volume:	88	992	513		888	249	658		594	386	149		414	450	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	88	992	513		888	249	658		594	386	149		414	450	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	88	992	513		888	249	658		594	386	149		414	450	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.95	0.85		0.92	0.95	0.85		0.92	0.95	0.85		0.92	0.91	1.00	
Lanes:	1.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00		2.00	3.00	1.00	
Final Sat.:	1805	3610	1615		3502	3610	1615		3502	3610	1615		3502	5187	1900	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.27	0.32		0.25	0.07	0.41		0.17	0.11	0.09		0.12	0.09	0.00	
Crit Moves:		****				****				****				****		
Green/Cycle:	0.21	0.30	0.46		0.28	0.37	0.55		0.18	0.16	0.16		0.16	0.13	0.00	
Volume/Cap:	0.24	0.92	0.69		0.92	0.19	0.74		0.92	0.67	0.58		0.74	0.65	0.00	
Delay/Veh:	25.1	37.6	19.0		39.7	16.1	15.9		48.2	32.8	32.5		35.5	33.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	25.1	37.6	19.0		39.7	16.1	15.9		48.2	32.8	32.5		35.5	33.0	0.0	
LOS by Move:	C	D	B		D	B	B		D	C	C		D	C	A	
HCM2kAvgQ:	2	16	11		15	2	13		11	6	4		5	4	0	

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 (#6) - TC-4 Access / Singleton Rd.

Cycle (sec):	115	Critical Vol./Cap.(X):	0.425
Loss Time (sec):	12	Average Delay (sec/veh):	7.6
Optimal Cycle:	OPTIMIZED	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	0	10	0	0	0	0	10	10	10	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	2 1 0	2	0	3 0 0
Volume Module:												
Base Vol:	12	0	59	0	0	0	0	1767	20	100	1291	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	0	59	0	0	0	0	1767	20	100	1291	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	12	0	59	0	0	0	0	1767	20	100	1291	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	0	59	0	0	0	0	1767	20	100	1291	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	12	0	59	0	0	0	0	1767	20	100	1291	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.91	0.91	0.92	0.91	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.97	0.03	2.00	3.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	5119	58	3502	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.35	0.35	0.03	0.25	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.72	0.72	0.09	0.81	0.00
Volume/Cap:	0.08	0.00	0.42	0.00	0.00	0.00	0.00	0.48	0.48	0.33	0.31	0.00
Delay/Veh:	48.5	0.0	51.8	0.0	0.0	0.0	0.0	6.9	6.9	50.0	2.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.5	0.0	51.8	0.0	0.0	0.0	0.0	6.9	6.9	50.0	2.8	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2kAvgQ:	0	0	2	0	0	0	0	9	9	2	4	0

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 (#2) - I-10 EB Ramps / Singleton Rd.

Cycle (sec):	65	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	12	Average Delay (sec/veh):	22.7
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	10	0	10	0	10	10	10	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	0 0	1 0	0	0 2	0 0	3	0 1	2 0	3	0 0
Volume Module:												
Base Vol:	0	0	0	272	0	630	0	1065	534	647	1774	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	272	0	630	0	1065	534	647	1774	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	272	0	630	0	1065	534	647	1774	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	272	0	630	0	1065	534	647	1774	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	272	0	630	0	1065	534	647	1774	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.75	1.00	0.91	0.85	0.92	0.91	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	2.00	0.00	3.00	1.00	2.00	3.00	0.00
Final Sat.:	0	0	0	1805	0	2842	0	5187	1615	3502	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.22	0.00	0.21	0.33	0.18	0.34	0.00
Crit Moves:						****			****	****		
Green/Cycle:	0.00	0.00	0.00	0.25	0.00	0.25	0.00	0.37	0.37	0.20	0.57	0.00
Volume/Cap:	0.00	0.00	0.00	0.61	0.00	0.90	0.00	0.56	0.90	0.90	0.60	0.00
Delay/Veh:	0.0	0.0	0.0	24.4	0.0	39.0	0.0	16.8	36.8	40.1	9.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	24.4	0.0	39.0	0.0	16.8	36.8	40.1	9.5	0.0
LOS by Move:	A	A	A	C	A	D	A	B	D	D	A	A
HCM2kAvgQ:	0	0	0	6	0	11	0	6	11	7	8	0

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 (#3) - I-10 WB Ramps / Singleton Rd.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.801
Loss Time (sec):	12	Average Delay (sec/veh):	22.0
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	0	10	0	0	0	10	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1! 0	1	0 0	0 0	0	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	641	0	659	0	0	0	228	1109	0	0	1780	430
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	641	0	659	0	0	0	228	1109	0	0	1780	430
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	641	0	659	0	0	0	228	1109	0	0	1780	430
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	641	0	659	0	0	0	228	1109	0	0	1780	430
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	641	0	659	0	0	0	228	1109	0	0	1780	430
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	0.92	0.91	1.00	1.00	0.91	0.85
Lanes:	1.49	0.00	1.51	0.00	0.00	0.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	2558	0	2582	0	0	0	3502	5187	0	0	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.25	0.00	0.26	0.00	0.00	0.00	0.07	0.21	0.00	0.00	0.34	0.27
Crit Moves:			****				****				****	
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.14	0.54	0.00	0.00	0.39	0.39
Volume/Cap:	0.86	0.00	0.87	0.00	0.00	0.00	0.46	0.40	0.00	0.00	0.87	0.68
Delay/Veh:	28.4	0.0	29.5	0.0	0.0	0.0	28.2	9.7	0.0	0.0	24.1	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	0.0	29.5	0.0	0.0	0.0	28.2	9.7	0.0	0.0	24.1	20.5
LOS by Move:	C	A	C	A	A	A	C	A	A	A	C	C
HCM2kAvgQ:	12	0	12	0	0	0	2	5	0	0	13	7

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 (#4) - Calimesa Bl. / Singleton Rd.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.902
Loss Time (sec):	8	Average Delay (sec/veh):	34.9
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	227	691	372	373	1044	636	461	1166	140	286	1347	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	691	372	373	1044	636	461	1166	140	286	1347	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	691	372	373	1044	636	461	1166	140	286	1347	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	691	372	373	1044	636	461	1166	140	286	1347	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	227	691	372	373	1044	636	461	1166	140	286	1347	258
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.99	0.85	0.92	0.95	0.85
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	1805	3610	1615	3502	3610	1615	3502	3772	1615	3502	5420	1615
Capacity Analysis Module:												
Vol/Sat:	0.13	0.19	0.23	0.11	0.29	0.39	0.13	0.31	0.09	0.08	0.25	0.16
Crit Moves:	****			****			****			****		
Green/Cycle:	0.13	0.28	0.28	0.16	0.30	0.46	0.16	0.32	0.32	0.13	0.30	0.46
Volume/Cap:	0.94	0.69	0.83	0.67	0.95	0.85	0.82	0.95	0.27	0.61	0.84	0.35
Delay/Veh:	74.7	26.4	38.2	32.7	43.0	27.1	40.2	40.9	19.1	33.1	28.6	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.7	26.4	38.2	32.7	43.0	27.1	40.2	40.9	19.1	33.1	28.6	13.4
LOS by Move:	E	C	D	C	D	C	D	D	B	C	C	B
HCM2kAvgQ:	9	9	11	6	18	16	6	17	2	4	13	4

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 (#5) - Realigned Roberts Rd. / Singleton Rd.

Cycle (sec):	60	Critical Vol./Cap.(X):	0.805
Loss Time (sec):	8	Average Delay (sec/veh):	24.9
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ignore		
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	2 0	2 0	1	2 0	2 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	217	650	641	290	817	521	712	392	189	647	765	770
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	650	641	290	817	521	712	392	189	647	765	770
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	217	650	641	290	817	521	712	392	189	647	765	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	650	641	290	817	521	712	392	189	647	765	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	217	650	641	290	817	521	712	392	189	647	765	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.95	0.85	0.92	0.91	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	1805	3610	1615	3502	3610	1615	3502	3610	1615	3502	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.40	0.08	0.23	0.32	0.20	0.11	0.12	0.18	0.15	0.00
Crit Moves:	****				****		****				****	
Green/Cycle:	0.17	0.25	0.47	0.19	0.27	0.52	0.25	0.20	0.20	0.22	0.18	0.00
Volume/Cap:	0.72	0.73	0.84	0.43	0.82	0.62	0.82	0.54	0.58	0.83	0.82	0.00
Delay/Veh:	32.0	23.8	22.4	21.7	26.1	11.6	27.9	22.2	24.3	29.4	29.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.0	23.8	22.4	21.7	26.1	11.6	27.9	22.2	24.3	29.4	29.8	0.0
LOS by Move:	C	C	C	C	C	B	C	C	C	C	C	A
HCM2kAvgQ:	6	8	14	3	10	8	9	4	4	6	5	0

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Traffic Analysis(JN:13311)
Proposed Oak Valley Town Center GPBO With Improvements
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 (#6) - TC-4 Access / Singleton Rd.

Cycle (sec):	60	Critical Vol./Cap.(X):	0.692
Loss Time (sec):	12	Average Delay (sec/veh):	16.9
Optimal Cycle:	OPTIMIZED	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	10	0	10		0	0	0		0	10	10		10	10	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1 0	0	0	1	0	0	0	0	0	0	2	1	0	2	0	3	0	0
Volume Module:																
Base Vol:	67	0	337		0	0	0		0	1262	61		308	2096	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	67	0	337		0	0	0		0	1262	61		308	2096	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	67	0	337		0	0	0		0	1262	61		308	2096	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	67	0	337		0	0	0		0	1262	61		308	2096	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	67	0	337		0	0	0		0	1262	61		308	2096	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	1.00	0.85		1.00	1.00	1.00		1.00	0.90	0.90		0.92	0.91	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	2.86	0.14		2.00	3.00	0.00	
Final Sat.:	1805	0	1615		0	0	0		0	4913	237		3502	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.00	0.21		0.00	0.00	0.00		0.00	0.26	0.26		0.09	0.40	0.00	
Crit Moves:			****							****			****			
Green/Cycle:	0.28	0.00	0.28		0.00	0.00	0.00		0.00	0.35	0.35		0.17	0.52	0.00	
Volume/Cap:	0.13	0.00	0.74		0.00	0.00	0.00		0.00	0.74	0.74		0.53	0.78	0.00	
Delay/Veh:	16.1	0.0	25.5		0.0	0.0	0.0		0.0	18.7	18.7		23.7	13.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.1	0.0	25.5		0.0	0.0	0.0		0.0	18.7	18.7		23.7	13.4	0.0	
LOS by Move:	B	A	C		A	A	A		A	B	B		C	B	A	
HCM2kAvgQ:	1	0	7		0	0	0		0	8	8		3	12	0	

Note: Queue reported is the number of cars per lane.

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Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment E

Traffic Phasing Evaluation

September 2020

September 28, 2020

Mr. John Ohanian
Oak Valley Development Company
P.O. Box 645
Calimesa, CA 92320

SUBJECT: OAK VALLEY TOWN CENTER TRAFFIC PHASING EVALUATION

Dear Mr. John Ohanian:

The purpose of this evaluation is to address comments by the City of Calimesa requesting an updated evaluation of development phasing for the Oak Valley Town Center ("Project"). The proposed Project is located adjacent to Singleton Road and west of Interstate 10 in Calimesa. Exhibit 1 illustrates the Project land use planning areas. For traffic analysis purposes, the following building gross floor areas have been derived from a recent illustrative plan for the Project:

- 1,020,800 square feet of high-cube parcel hub warehouse
- 1,229,200 square feet of high-cube cold storage warehouse
- 751,800 square feet of commercial retail

The Project is located within the Summerwind Ranch Specific Plan, which was previously analyzed in the Summerwind Ranch Traffic Impact Analysis (March 2, 2005). Long range future traffic conditions with Project land use changes have been updated in the Trip Generation and Circulation Context for the Oak Valley Town Center (September 28, 2020).

In this traffic phasing evaluation, Existing Plus Ambient Growth Plus Cumulative development, without and with Project land uses, are examined for each of the following phases:

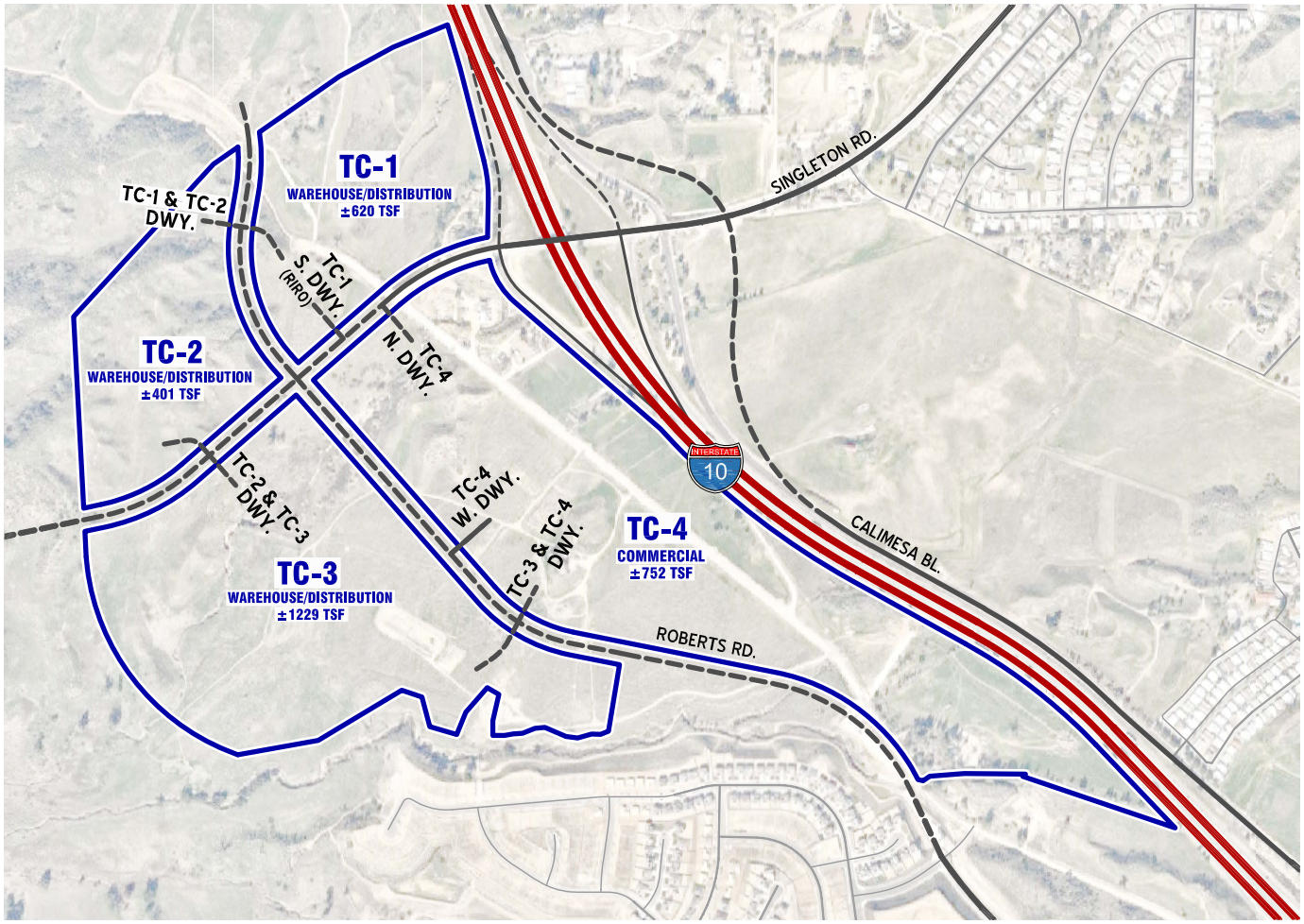
- Project Phase 1 (2022)
- Project Phase 2 (2024)
- Project Phase 3 (2026)
- Project Buildout (Phase 4, 2030)

PROJECT PHASING REPRESENTATION

Project Phase 1 (2022)

Table 1 presents the Oak Valley Town Center project land uses which are evaluated in each phase. Project Phase 1 (2022) includes 1,229,200 square feet of high-cube cold storage warehouse uses.

EXHIBIT 1: PROPOSED OAK VALLEY TOWN CENTER PLANNING AREAS



LEGEND:

TC-1	▪ PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA
±752 TSF	▪ 1000 SQUARE FEET OF BUILDING GROSS FLOOR AREA
- - - -	▪ REALIGNMENT/FUTURE ROADWAY

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URBAN CROSSROADS

TABLE 1: OAK VALLEY TOWN CENTER PROJECT PHASING

Planning Area	Land Use	Project Phasing Quantity[1]			
		Phase 1 (2022)	Phase 2 (2024)	Phase 3 (2026)	Phase 4 (2030)
TC-1	High-Cube Parcel Hub Warehouse	-	620.3 TSF	*620.3 TSF*	*620.3 TSF*
TC-2	High-Cube Parcel Hub Warehouse	-	400.5 TSF	*400.5 TSF*	*400.5 TSF*
TC-3	High-Cube Cold Storage Warehouse	791.5 TSF	*791.5 TSF*	*791.5 TSF*	*791.5 TSF*
	High-Cube Cold Storage Warehouse	437.8 TSF	*437.8 TSF*	*437.8 TSF*	*437.8 TSF*
	Subtotal	1,229.2 TSF	*1,229.2 TSF*	*1,229.2 TSF*	*1,229.2 TSF*
TC-4	Commercial Retail	-	-	200.0 TSF	751.8 TSF
Proposed Oak Valley Town Center		**1,229.2 TSF**	**2,250.0 TSF**	**2,450.0 TSF**	**3,001.8 TSF**

[1] TSF = Thousand Square Feet

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Exhibit 2 shows the Oak Valley Town Center phase 1 (2022) roadway network. Project Phase 1 includes construction of the ultimate half-section (interim 2-lane section) of Singleton Road along the north Project Phase 1 frontage, the ultimate half-section (interim 2-lane section) of Roberts Road along the east Project Phase 1 frontage, and an interim 2-lane section of Singleton Road between the realigned Roberts Road and the I-10 eastbound ramps intersection. For Project Phase 1, access is provided via one driveway to/from Singleton Road and one driveway to/from the realigned Roberts Road. In addition, Phase 1 include the connection of Roberts Road to Cherry Valley Boulevard as a secondary/emergency access roadway, per City staff request.

Additional roadway improvements implemented prior to occupancy of Project Phase 1 include construction of the westerly half of the I-10 interchange at Singleton Road, which includes (1) the eastbound off ramp from I-10 to Singleton Road, (2) the westbound on ramp to I-10 from Singleton Road, and (3) realignment of Calimesa Boulevard to move the Calimesa Boulevard / Singleton Road intersection further east of the I-10 westbound ramps intersection on Singleton Road.

Project Phase 2 (2024)

Project Phase 2 (2024) adds 1,020,800 square feet of high-cube parcel hub warehouse. The roadway network for Project Phase 2 is shown on Exhibit 3. Project Phase 2 includes construction of the ultimate full-section width of Singleton Road from the western Project boundary to Roberts Road, construction of the ultimate full-section width of Roberts Road adjacent to the Phase 2 development areas north of Singleton Road, and the extension of Roberts Road south to the existing Roberts Road segment which allows connection with Cherry Valley Boulevard.

For the Project Phase 2 sites, access is provided via one full access driveway to/from Singleton Road west of Roberts Road, one driveway to/from Singleton Road east of Roberts Road that is limited to right-turns in and out only (RIRO), and one full access driveway intersection serving both sides of Roberts Road north of Singleton Road.

Project Phase 3 (2026)

Project Phase 3 (2026) adds 200,000 square feet of commercial retail and includes the roadway network shown on Exhibit 4 which proposes construction of the ultimate full-section width of Roberts Road south of Singleton Road, and the ultimate full-section width of Singleton Road east of Roberts Road adjacent to the Project commercial retail areas.

Project Buildout (Phase 4, 2030)

Project Phase 4 (Project Buildout) adds 551,800 square feet of commercial retail. Exhibit 5 shows the roadway system proposed for 2030 conditions, which includes extension of Singleton Road westerly to connect to San Timoteo Canyon Road. Extensive widening and reconstruction of the existing I-10/Singleton interchange bridge is required for Project Phase 4 conditions.

TRIP GENERATION FOR PROJECT PHASES

Trip generation represents the amount of traffic that is attracted and produced by a development and

EXHIBIT 2: PROPOSED OAK VALLEY TOWN CENTER
PHASE 1 (2022) ROADWAY NETWORK

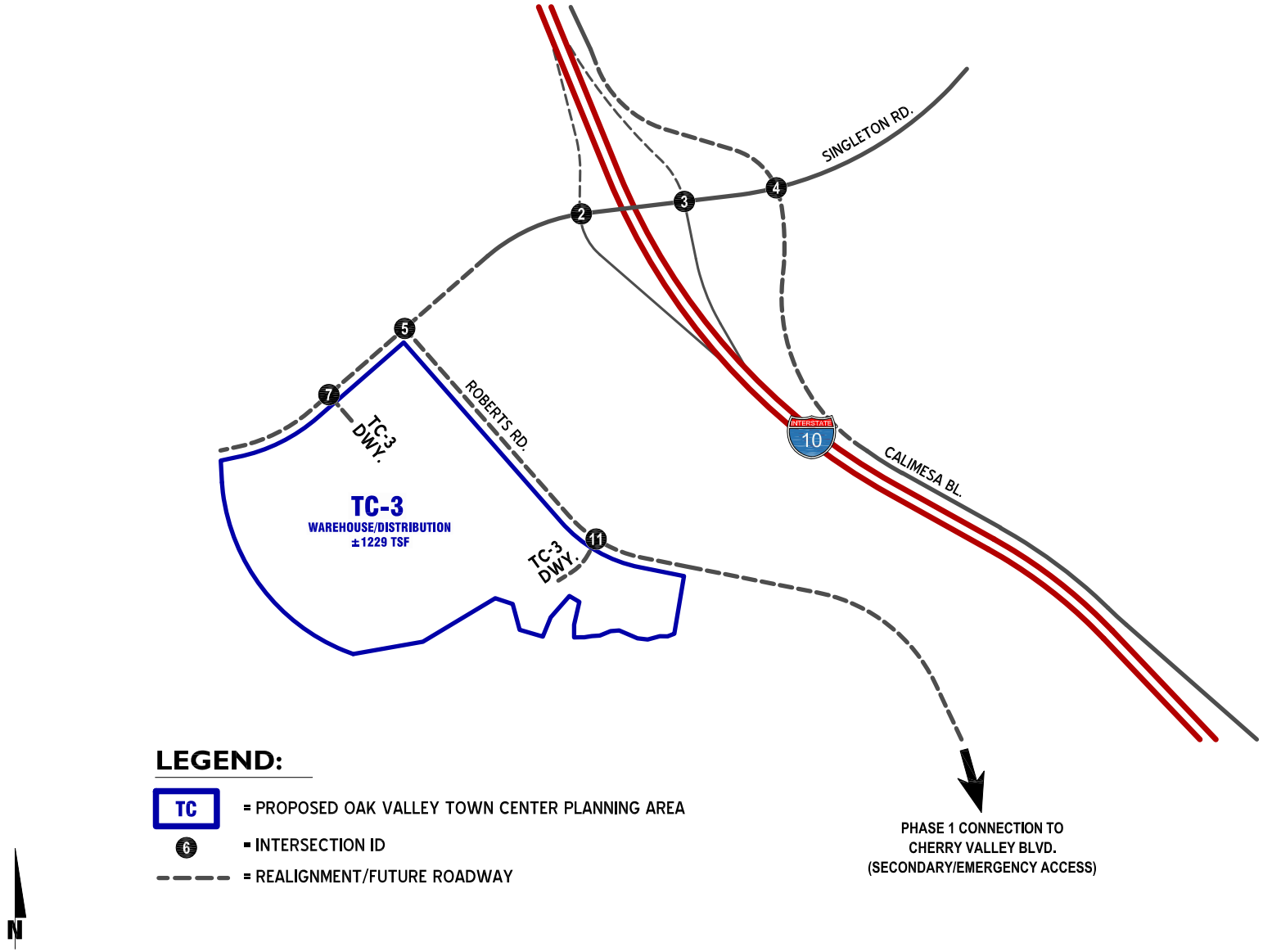


EXHIBIT 3: PROPOSED OAK VALLEY TOWN CENTER PHASE 2 (2024) ROADWAY NETWORK

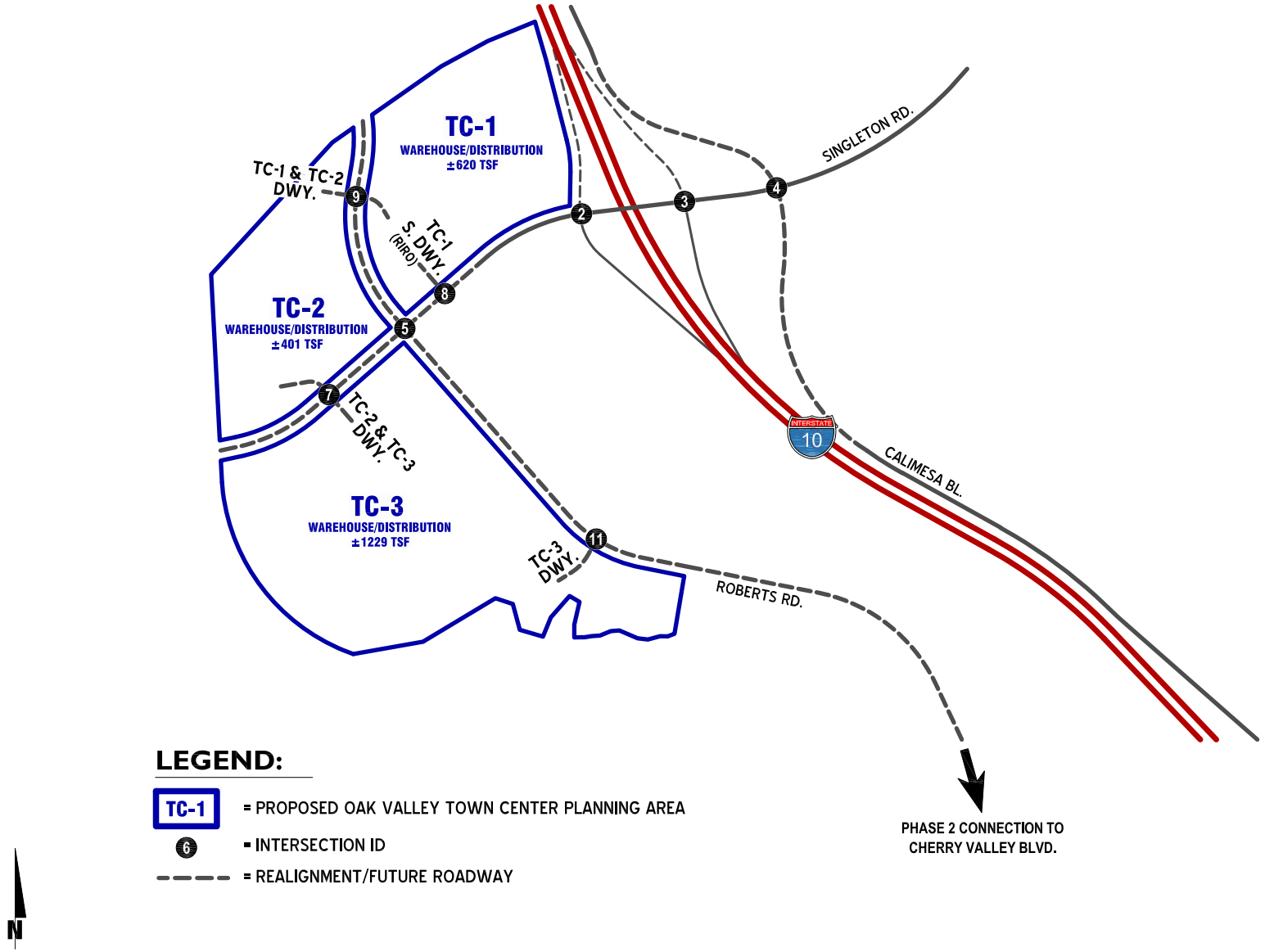


EXHIBIT 4: PROPOSED OAK VALLEY TOWN CENTER
PHASE 3 (2026) ROADWAY NETWORK

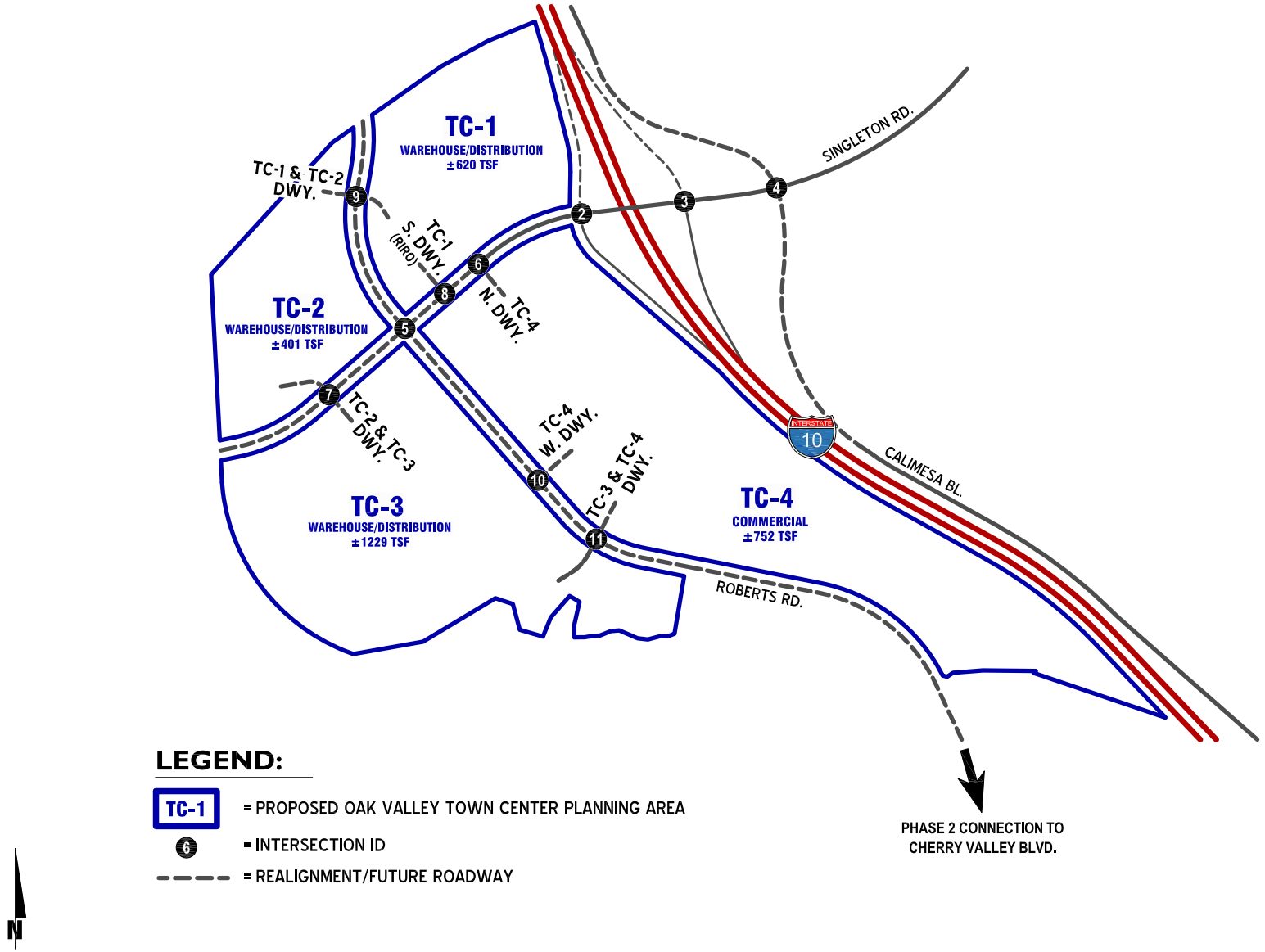
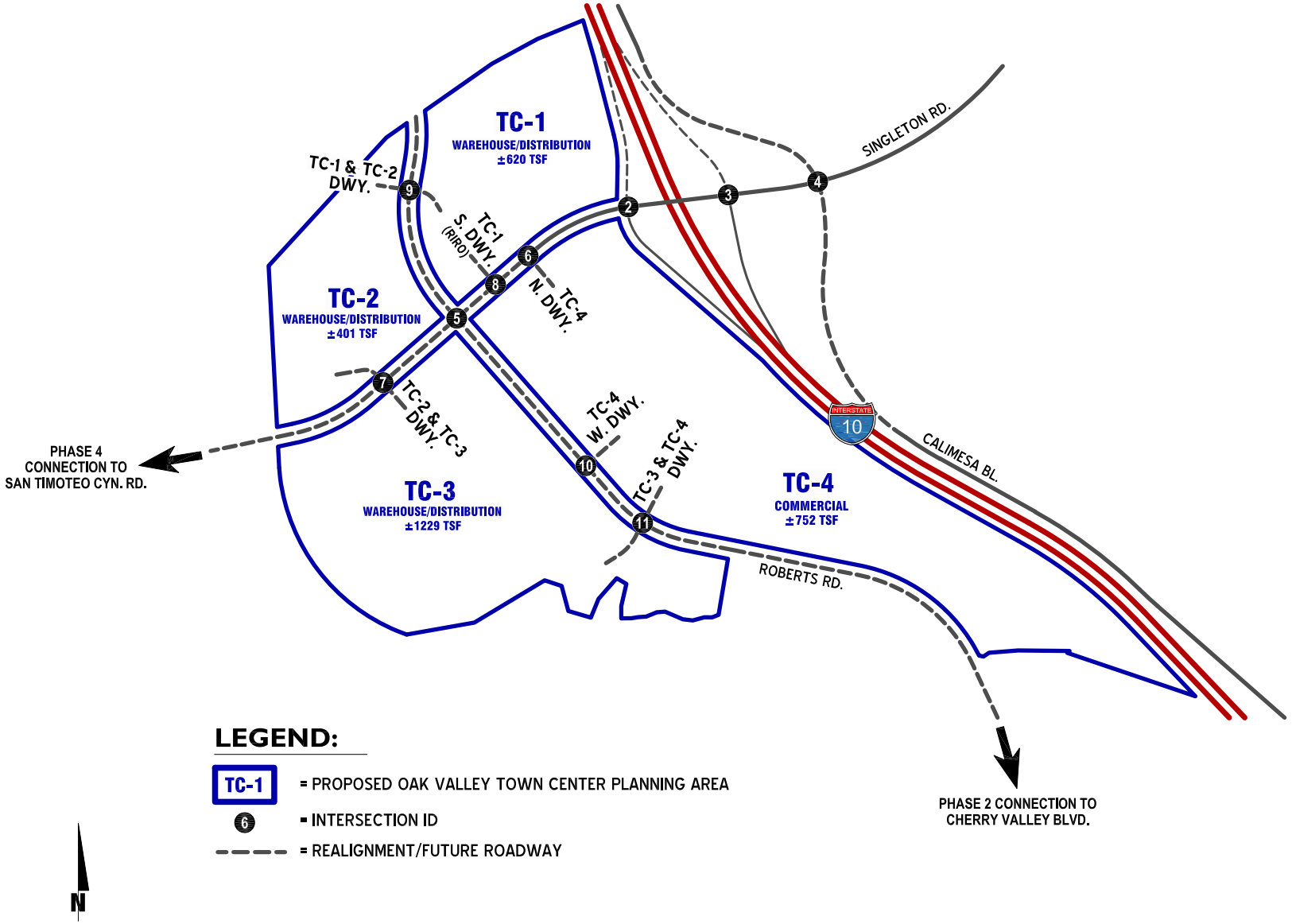


EXHIBIT 5: PROPOSED OAK VALLEY TOWN CENTER
PHASE 4 (2030) ROADWAY NETWORK



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URBAN CROSSROADS

TABLE 2: PHASE 1 (2022) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse[3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles)[6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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is based upon the specific land uses planned for a given project. Project Phase 1 (2022) trip generation is shown on Table 2.

As shown on Table 2, Phase 1 of the proposed Project is anticipated to generate a net total of 2,605 vehicle trip-ends per day on a typical weekday with 136 vehicles per hour (VPH) during the weekday AM peak hour and 147 VPH during the weekday PM peak hour.

Refinements to the raw trip generation estimates have been made to provide a more detailed breakdown of trips between passenger cars and trucks. Trip generation for heavy trucks was further subdivided by truck type (or number of axles). The total truck percentage is comprised of 3 different truck types: 2-axle, 3-axle, and 4+-axle trucks. Passenger Car Equivalent (PCE) factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles).

PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The Project Phase 1 (2022) trip generation summary for Passenger Car Equivalents (PCEs) is shown on Table 3. Trip generation for Project Phase 1 (2022) PCEs on a typical weekday include 3,755 trip-ends per day on a typical weekday with 194 PCE vehicles per hour (VPH) during the weekday AM peak hour and 190 PCE VPH during the weekday PM peak hour.

Table 4 shows trip generation for Phase 2 (2024) of the proposed Project in actual vehicles, which is anticipated to generate a net total of 7,331 trip-ends per day on a typical weekday with 851 vehicles per hour (VPH) during the weekday AM peak hour and 802 VPH during the weekday PM peak hour. For Project Phase 2 (2024) PCEs, Table 5 indicates 10,831 PCE trip-ends are generated per day on a typical weekday with 1,251 PCE vehicles per hour (VPH) during the weekday AM peak hour and 1,066 PCE VPH during the weekday PM peak hour.

Project Phase 3 (2026) trip generation is shown on Table 6 for actual vehicles, while the Project Phase 3 (2026) trip generation summary for Passenger Car Equivalents (PCEs) is shown on Table 7. As shown on Table 6, Phase 3 of the proposed Project is anticipated to generate a net total of 14,126 external vehicle trip-ends per day on a typical weekday with 1,021 external vehicles per hour (VPH) during the weekday AM peak hour and 1,488 external VPH during the weekday PM peak hour. Trip generation for Project Phase 3 (2026) external PCEs on a typical weekday include 17,626 trip-ends per day on a typical weekday with 1,421 PCE vehicles per hour (VPH) during the weekday AM peak hour and 1,752 PCE VPH during the weekday PM peak hour.

Table 8 shows trip generation for Phase 4 (2030) of the proposed Project in actual vehicles, which is anticipated to generate a net total of 32,873 external trip-ends per day on a typical weekday with 1,488 external vehicles per hour (VPH) during the weekday AM peak hour and 3,381 external VPH during the weekday PM peak hour. For Project Phase 4 (2030) external PCEs, Table 9 indicates 36,373 PCE trip-ends are generated per day on a typical weekday with 1,888 PCE vehicles per hour (VPH) during the weekday AM peak hour and 3,645 PCE VPH during the weekday PM peak hour.

TABLE 3: PHASE 1 (2022) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (PCE)

Proposed Oak Valley Town Center Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse (With PCE Adj.)[3,4,5,6]	157	1,229.2 TSF	0.121	0.036	0.157	0.045	0.111	0.156	3.056
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.014	0.005	0.019	0.005	0.009	0.014	0.356
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.006	0.002	0.008	0.002	0.004	0.006	0.150
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.042	0.012	0.054	0.012	0.030	0.042	1.113

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	22	95	33	82	115	1,766
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*6*	*23*	*6*	*11*	*17*	*437*
	3-axle (PCE = 2.0):			*8*	*2*	*10*	*2*	*5*	*7*	*184*
	4+-axle (3.0):			*51*	*15*	*66*	*15*	*36*	*51*	*1,368*
	- Net Truck Trips (PCE)			76	23	99	23	52	75	1,989
	TC-3 Subtotal (PCE)[6]			**149**	**45**	**194**	**56**	**134**	**190**	**3,755**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).
ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Passenger Car Equivalent (PCE) rates are per San Bernardino County Transportation Authority (SBCTA)

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TABLE 4: PHASE 2 (2024) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse[3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371
High-Cube Parcel Hub Warehouse[3,4,5]	156	1,020.8 TSF	0.350	0.350	0.700	0.435	0.205	0.640	4.630
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.018	0.018	0.036	0.016	0.007	0.023	0.250
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.022	0.022	0.044	0.020	0.009	0.029	0.308
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.067	0.067	0.134	0.059	0.028	0.087	0.933

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle:			*11*	*11*	*22*	*10*	*4*	*14*	*155*
	3-axle:			*14*	*14*	*28*	*12*	*6*	*18*	*191*
	4+-axle:			*42*	*42*	*84*	*37*	*17*	*54*	*579*
	- Net Truck Trips (Actual Vehicles)			67	67	134	59	27	86	925
	TC-1 Subtotal (Actual Vehicles)[6]			**217**	**218**	**435**	**271**	**127**	**398**	**2,872**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle:			*7*	*7*	*14*	*6*	*3*	*9*	*100*
	3-axle:			*9*	*9*	*18*	*8*	*4*	*12*	*123*
	4+-axle:			*27*	*27*	*54*	*24*	*11*	*35*	*374*
	- Net Truck Trips (Actual Vehicles)			43	43	86	38	18	56	597
	TC-2 Subtotal (Actual Vehicles)[6]			**140**	**140**	**280**	**175**	**82**	**257**	**1,854**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles)[6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**
TOTAL EXTERNAL TRIPS (ACTUAL VEHICLES)				**462**	**389**	**851**	**488**	**314**	**802**	**7,331**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 5: PHASE 2 (2024) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (PCE)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse (With PCE Adj.)[3,4,5,6]	157	1,229.2 TSF	0.121	0.036	0.157	0.045	0.111	0.156	3.056
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.014	0.005	0.019	0.005	0.009	0.014	0.356
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.006	0.002	0.008	0.002	0.004	0.006	0.150
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.042	0.012	0.054	0.012	0.030	0.042	1.113
High-Cube Parcel Hub Warehouse (With PCE Adj.)[3,4,5,6]	156	1,020.8 TSF	0.514	0.515	1.029	0.582	0.274	0.856	6.929
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.027	0.027	0.054	0.024	0.011	0.035	0.375
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.044	0.044	0.088	0.040	0.018	0.058	0.616
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.201	0.201	0.402	0.177	0.084	0.261	2.799

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*17*	*34*	*15*	*7*	*22*	*234*
	3-axle (PCE = 2.0):			*28*	*28*	*56*	*25*	*11*	*36*	*382*
	4+-axle (3.0):			*126*	*126*	*252*	*110*	*52*	*162*	*1,736*
	- Net Truck Trips (PCE)			171	171	342	150	70	220	2,352
	TC-1 Subtotal (PCE)[6]			**321**	**322**	**643**	**362**	**170**	**532**	**4,299**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle (PCE = 1.5):			*11*	*11*	*22*	*10*	*4*	*14*	*150*
	3-axle (PCE = 2.0):			*18*	*18*	*36*	*16*	*8*	*24*	*248*
	4+-axle (3.0):			*81*	*81*	*162*	*71*	*34*	*105*	*1,122*
	- Net Truck Trips (PCE)			110	110	220	97	46	143	1,520
	TC-2 Subtotal (PCE)[6]			**207**	**207**	**414**	**234**	**110**	**344**	**2,777**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	22	95	33	82	115	1,766
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*6*	*23*	*6*	*11*	*17*	*437*
	3-axle (PCE = 2.0):			*8*	*2*	*10*	*2*	*5*	*7*	*184*
	4+-axle (3.0):			*51*	*15*	*66*	*15*	*36*	*51*	*1,368*
	- Net Truck Trips (PCE)			76	23	99	23	52	75	1,989
	TC-3 Subtotal (PCE)[6]			**149**	**45**	**194**	**56**	**134**	**190**	**3,755**
TOTAL EXTERNAL TRIPS (PCE)				**677**	**574**	**1,251**	**652**	**414**	**1,066**	**10,831**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Passenger Car Equivalent (PCE) rates are per San Bernardino County Transportation Authority (SBCTA)

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TABLE 6: PHASE 3 (2026) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates[1]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
High-Cube Cold Storage Warehouse[3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371
High-Cube Parcel Hub Warehouse[3,4,5]	156	1,020.8 TSF	0.350	0.350	0.700	0.435	0.205	0.640	4.630
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.018	0.018	0.036	0.016	0.007	0.023	0.250
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.022	0.022	0.044	0.020	0.009	0.029	0.308
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.067	0.067	0.134	0.059	0.028	0.087	0.933
Shopping Center	820	200.0 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
				AM Peak Hour			PM Peak Hour			
Planning Area	Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle:			*11*	*11*	*22*	*10*	*4*	*14*	*155*
	3-axle:			*14*	*14*	*28*	*12*	*6*	*18*	*191*
	4+-axle:			*42*	*42*	*84*	*37*	*17*	*54*	*579*
	- Net Truck Trips (Actual Vehicles)			67	67	134	59	27	86	925
	TC-1 Subtotal (Actual Vehicles)[6]			**217**	**218**	**435**	**271**	**127**	**398**	**2,872**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle:			*7*	*7*	*14*	*6*	*3*	*9*	*100*
	3-axle:			*9*	*9*	*18*	*8*	*4*	*12*	*123*
	4+-axle:			*27*	*27*	*54*	*24*	*11*	*35*	*374*
	- Net Truck Trips (Actual Vehicles)			43	43	86	38	18	56	597
	TC-2 Subtotal (Actual Vehicles)[6]			**140**	**140**	**280**	**175**	**82**	**257**	**1,854**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles)[6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**
TC-4	Commercial Retail	820	200.0 TSF	116	72	188	366	396	762	7,550
	- Commercial Pass-By/Internal (10%)			*(9)*	*(9)*	*(18)*	*(38)*	*(38)*	*(76)*	*(755)*
	TC-4 Subtotal			**107**	**63**	**170**	**328**	**358**	**686**	**6,795**
TOTAL EXTERNAL TRIPS (ACTUAL VEHICLES)				**569**	**452**	**1,021**	**816**	**672**	**1,488**	**14,126**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 7: PHASE 3 (2026) PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (PCE)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
	ITE LU		AM Peak Hour			PM Peak Hour			
Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
High-Cube Cold Storage Warehouse (With PCE Adj.)[3,4,5,6]	157	1,229.2 TSF	0.121	0.036	0.157	0.045	0.111	0.156	3.056
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.014	0.005	0.019	0.005	0.009	0.014	0.356
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.006	0.002	0.008	0.002	0.004	0.006	0.150
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.042	0.012	0.054	0.012	0.030	0.042	1.113
High-Cube Parcel Hub Warehouse (With PCE Adj.)[3,4,5,6]	156	1,020.8 TSF	0.514	0.515	1.029	0.582	0.274	0.856	6.929
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.027	0.027	0.054	0.024	0.011	0.035	0.375
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.044	0.044	0.088	0.040	0.018	0.058	0.616
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.201	0.201	0.402	0.177	0.084	0.261	2.799
Commercial Retail	820	200.0 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
Planning		ITE LU		AM Peak Hour			PM Peak Hour			
Area	Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*17*	*34*	*15*	*7*	*22*	*234*
	3-axle (PCE = 2.0):			*28*	*28*	*56*	*25*	*11*	*36*	*382*
	4+-axle (3.0):			*126*	*126*	*252*	*110*	*52*	*162*	*1,736*
	- Net Truck Trips (PCE)			171	171	342	150	70	220	2,352
	TC-1 Subtotal (PCE)[6]			**321**	**322**	**643**	**362**	**170**	**532**	**4,299**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle (PCE = 1.5):			*11*	*11*	*22*	*10*	*4*	*14*	*150*
	3-axle (PCE = 2.0):			*18*	*18*	*36*	*16*	*8*	*24*	*248*
	4+-axle (3.0):			*81*	*81*	*162*	*71*	*34*	*105*	*1,122*
	- Net Truck Trips (PCE)			110	110	220	97	46	143	1,520
	TC-2 Subtotal (PCE)[6]			**207**	**207**	**414**	**234**	**110**	**344**	**2,777**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	22	95	33	82	115	1,766
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*6*	*23*	*6*	*11*	*17*	*437*
	3-axle (PCE = 2.0):			*8*	*2*	*10*	*2*	*5*	*7*	*184*
	4+-axle (3.0):			*51*	*15*	*66*	*15*	*36*	*51*	*1,368*
	- Net Truck Trips (PCE)			76	23	99	23	52	75	1,989
	TC-3 Subtotal (PCE)[6]			**149**	**45**	**194**	**56**	**134**	**190**	**3,755**
TC-4	Commercial Retail	820	200.0 TSF	116	72	188	366	396	762	7,550
	- Commercial Pass-By/Internal (10%)			*(9)*	*(9)*	*(18)*	*(38)*	*(38)*	*(76)*	*(755)*
	TC-4 Subtotal			**107**	**63**	**170**	**328**	**358**	**686**	**6,795**
TOTAL EXTERNAL TRIPS (PCE)				**784**	**637**	**1,421**	**980**	**772**	**1,752**	**17,626**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Passenger Car Equivalent (PCE) rates are per San Bernardino County Transportation Authority (SBCTA)

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TABLE 8: PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates[1]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
High-Cube Cold Storage Warehouse[3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371
High-Cube Parcel Hub Warehouse[3,4,5]	156	1,020.8 TSF	0.350	0.350	0.700	0.435	0.205	0.640	4.630
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.018	0.018	0.036	0.016	0.007	0.023	0.250
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.022	0.022	0.044	0.020	0.009	0.029	0.308
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.067	0.067	0.134	0.059	0.028	0.087	0.933
Shopping Center	820	751.8 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
				AM Peak Hour			PM Peak Hour			
Planning Area	Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle:			*11*	*11*	*22*	*10*	*4*	*14*	*155*
	3-axle:			*14*	*14*	*28*	*12*	*6*	*18*	*191*
	4+-axle:			*42*	*42*	*84*	*37*	*17*	*54*	*579*
	- Net Truck Trips (Actual Vehicles)			67	67	134	59	27	86	925
	TC-1 Subtotal (Actual Vehicles)[6]			**217**	**218**	**435**	**271**	**127**	**398**	**2,872**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle:			*7*	*7*	*14*	*6*	*3*	*9*	*100*
	3-axle:			*9*	*9*	*18*	*8*	*4*	*12*	*123*
	4+-axle:			*27*	*27*	*54*	*24*	*11*	*35*	*374*
	- Net Truck Trips (Actual Vehicles)			43	43	86	38	18	56	597
	TC-2 Subtotal (Actual Vehicles)[6]			**140**	**140**	**280**	**175**	**82**	**257**	**1,854**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles)[6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**
TC-4	Commercial Retail	820	751.8 TSF	436	271	707	1,376	1,489	2,865	28,380
	- Commercial Pass-By/Internal (10%)			*(35)*	*(35)*	*(70)*	*(143)*	*(143)*	*(286)*	*(2,838)*
	TC-4 Subtotal			**401**	**236**	**637**	**1,233**	**1,346**	**2,579**	**25,542**
TOTAL EXTERNAL TRIPS (ACTUAL VEHICLES)				**863**	**625**	**1,488**	**1,721**	**1,660**	**3,381**	**32,873**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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TABLE 9: PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (PCE)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
	ITE LU		AM Peak Hour			PM Peak Hour			
Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
High-Cube Cold Storage Warehouse (With PCE Adj.)[3,4,5,6]	157	1,229.2 TSF	0.121	0.036	0.157	0.045	0.111	0.156	3.056
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.014	0.005	0.019	0.005	0.009	0.014	0.356
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.006	0.002	0.008	0.002	0.004	0.006	0.150
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.042	0.012	0.054	0.012	0.030	0.042	1.113
High-Cube Parcel Hub Warehouse (With PCE Adj.)[3,4,5,6]	156	1,020.8 TSF	0.514	0.515	1.029	0.582	0.274	0.856	6.929
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily); (PCE = 1.5)			0.027	0.027	0.054	0.024	0.011	0.035	0.375
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily); (PCE = 2.0)			0.044	0.044	0.088	0.040	0.018	0.058	0.616
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily); (PCE = 3.0)			0.201	0.201	0.402	0.177	0.084	0.261	2.799
Commercial Retail	820	751.8 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
Planning		ITE LU		AM Peak Hour			PM Peak Hour			
Area	Land Use	Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*17*	*34*	*15*	*7*	*22*	*234*
	3-axle (PCE = 2.0):			*28*	*28*	*56*	*25*	*11*	*36*	*382*
	4+-axle (3.0):			*126*	*126*	*252*	*110*	*52*	*162*	*1,736*
	- Net Truck Trips (PCE)			171	171	342	150	70	220	2,352
	TC-1 Subtotal (PCE)[6]			**321**	**322**	**643**	**362**	**170**	**532**	**4,299**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle (PCE = 1.5):			*11*	*11*	*22*	*10*	*4*	*14*	*150*
	3-axle (PCE = 2.0):			*18*	*18*	*36*	*16*	*8*	*24*	*248*
	4+-axle (3.0):			*81*	*81*	*162*	*71*	*34*	*105*	*1,122*
	- Net Truck Trips (PCE)			110	110	220	97	46	143	1,520
	TC-2 Subtotal (PCE)[6]			**207**	**207**	**414**	**234**	**110**	**344**	**2,777**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	22	95	33	82	115	1,766
	- Truck Trips									
	2-axle (PCE = 1.5):			*17*	*6*	*23*	*6*	*11*	*17*	*437*
	3-axle (PCE = 2.0):			*8*	*2*	*10*	*2*	*5*	*7*	*184*
	4+-axle (3.0):			*51*	*15*	*66*	*15*	*36*	*51*	*1,368*
	- Net Truck Trips (PCE)			76	23	99	23	52	75	1,989
	TC-3 Subtotal (PCE)[6]			**149**	**45**	**194**	**56**	**134**	**190**	**3,755**
TC-4	Commercial Retail	820	751.8 TSF	436	271	707	1,376	1,489	2,865	28,380
	- Commercial Pass-By/Internal (10%)			*(35)*	*(35)*	*(70)*	*(143)*	*(143)*	*(286)*	*(2,838)*
	TC-4 Subtotal			**401**	**236**	**637**	**1,233**	**1,346**	**2,579**	**25,542**
TOTAL EXTERNAL TRIPS (PCE)				**1,078**	**810**	**1,888**	**1,885**	**1,760**	**3,645**	**36,373**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Passenger Car Equivalent (PCE) rates are per San Bernardino County Transportation Authority (SBCTA)

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TRIP DISTRIBUTION FOR PROJECT PHASES

Exhibit 6 shows the trip distribution patterns for the proposed Project Phase 1 (2022) planning area TC-3. The trip distribution pattern has been developed based on the Project TIA and refined to reflect the Project phasing and the surrounding uses in the vicinity of the proposed Project as they exist today and are planned for the future. Approximately 60% of the Project Phase 1 traffic is anticipated to use the driveway at Singleton Road, while approximately 40% of the Project Phase 1 is anticipated to use the driveway at Roberts Road. The Project access to / from the I-10 freeway is split with 45% westerly and 40% easterly.

Exhibits 7, 8, and 9 show the trip distribution patterns for the proposed Project Phase 2 (2024) planning areas TC-1, TC-2, and TC-3, respectively. Individual driveway maneuvers vary by TC planning area, but at the Project boundaries, the trip distribution patterns generally travel similar directions. Project Phase 2 traffic is oriented westerly on the I-10 freeway (45%), easterly on the I-10 freeway (30%), southerly along Roberts Road (15%), and easterly on Singleton Road (10%).

Project Phase 3 (2026) trip distribution patterns are shown on Exhibit 10 (TC-1), Exhibit 11 (TC-2), Exhibit 12 (TC-3), and Exhibit 13 (TC-4). For TC-1 through TC-3, the Project Phase 3 traffic patterns are similar to the pattern for the same planning area in Project Phase 2. Project Phase 3 adds land uses within TC-4; and the project trip distribution pattern for TC-4 is oriented less to the east along Singleton Road and more to the south along Roberts Road than the other TCs.

Exhibits 14, 15, 16 and 17 show the trip distribution patterns for the proposed Project Phase 4 (2030) planning areas TC-1, TC-2, TC-3 and TC-4, respectively. In comparison to previous phases, Project Buildout (Phase 4) traffic is oriented more westerly, with the extension of Singleton Road west of the Project area to San Timoteo Canyon Road.

TRAFFIC ANALYSIS

The traffic volumes have been developed based upon the difference between existing and future volumes in the March 2005 TIA with September 2020 adjustments, modified to reflect reasonable background growth for each scenario year, in combination with updated cumulative projects information.

PROJECT PHASE 1 (2022)

AM and PM peak hour traffic volumes for 2022 conditions shown on Exhibit 18 (without Project) and Exhibit 19 (with Project Phase 1). Project Phase 1 (2022) includes:

- Existing 2019 volumes
- Ambient growth traffic
- Cumulative Development traffic
- Project Phase 1 Traffic (for the “with Project Phase 1” scenario)

EXHIBIT 6: PHASE 1 (2022) TC-3 PROJECT TRIP DISTRIBUTION

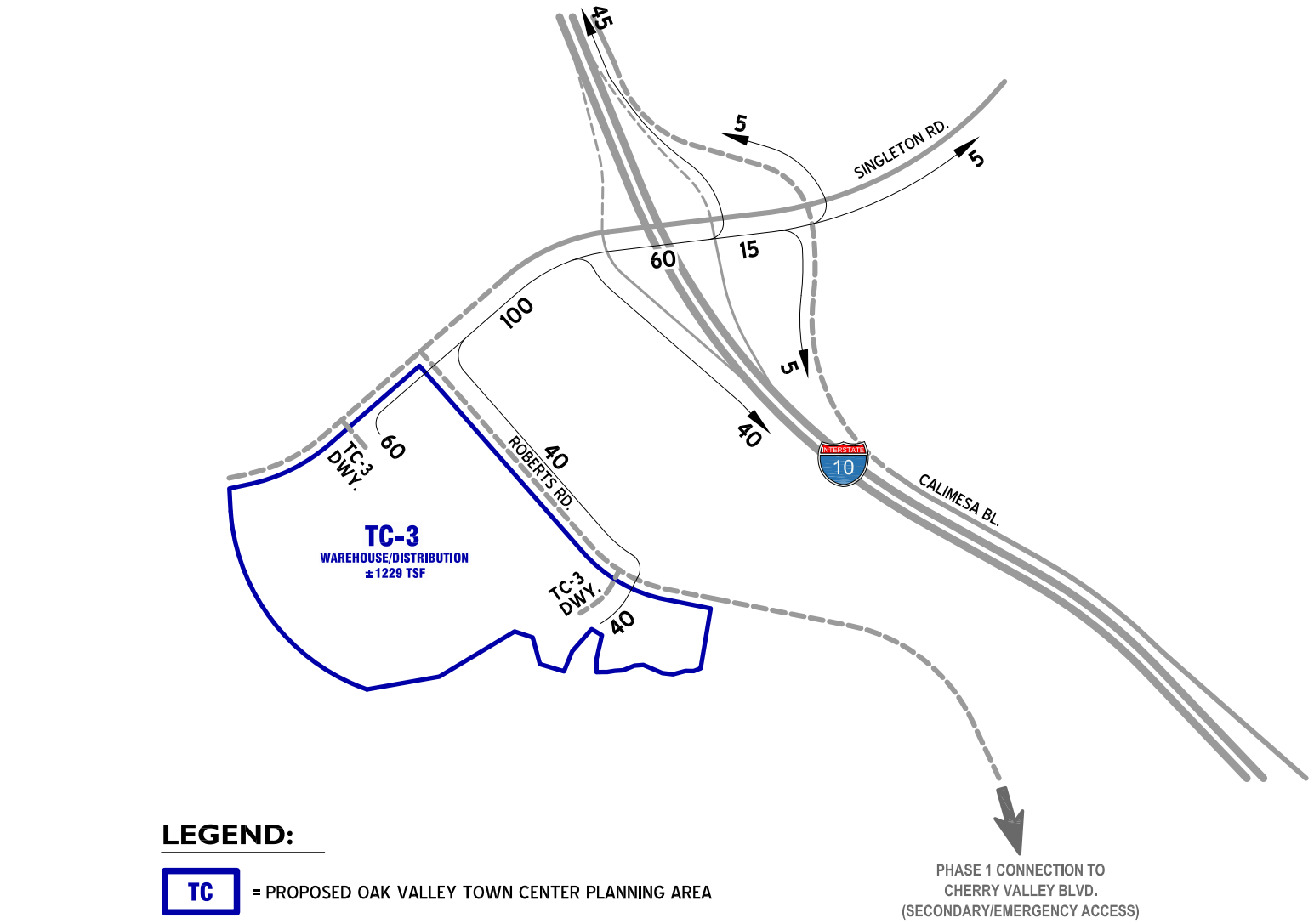
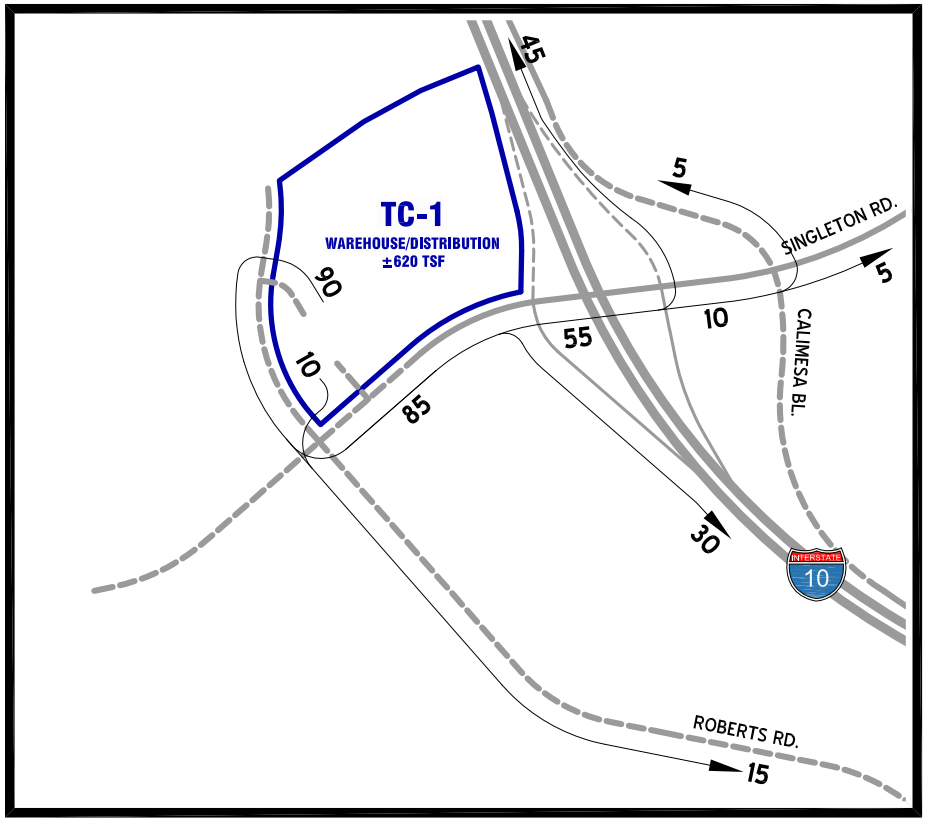
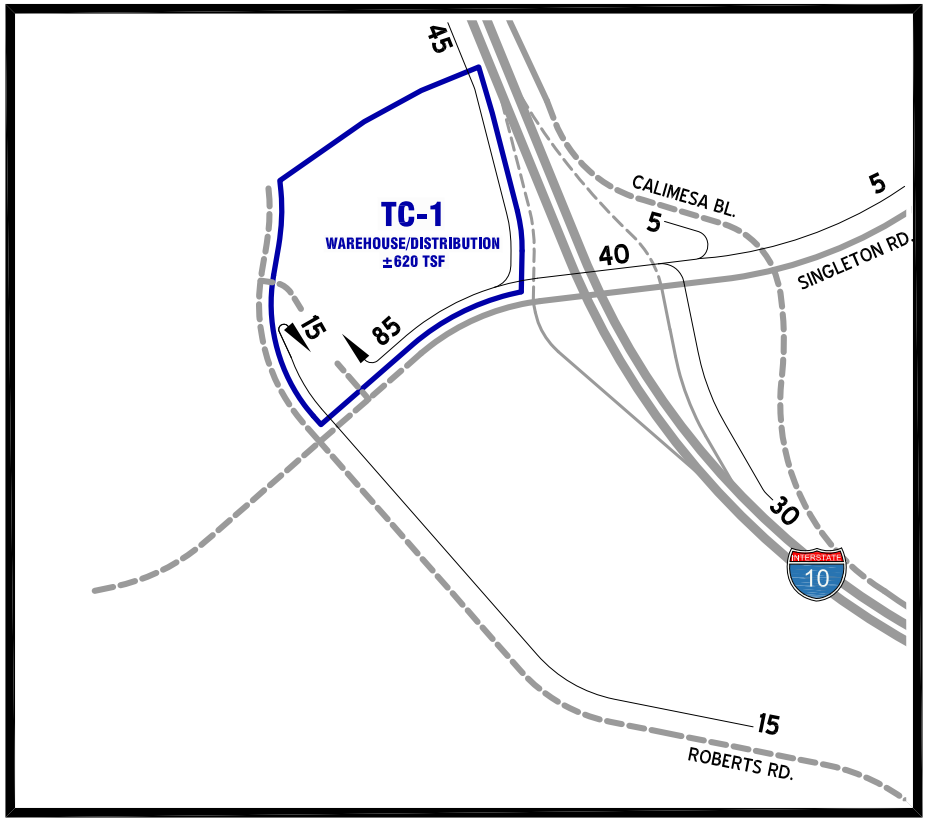


EXHIBIT 7: PHASE 2 (2024) TC-1 PROJECT TRIP DISTRIBUTION

OUTBOUND



INBOUND



LEGEND:

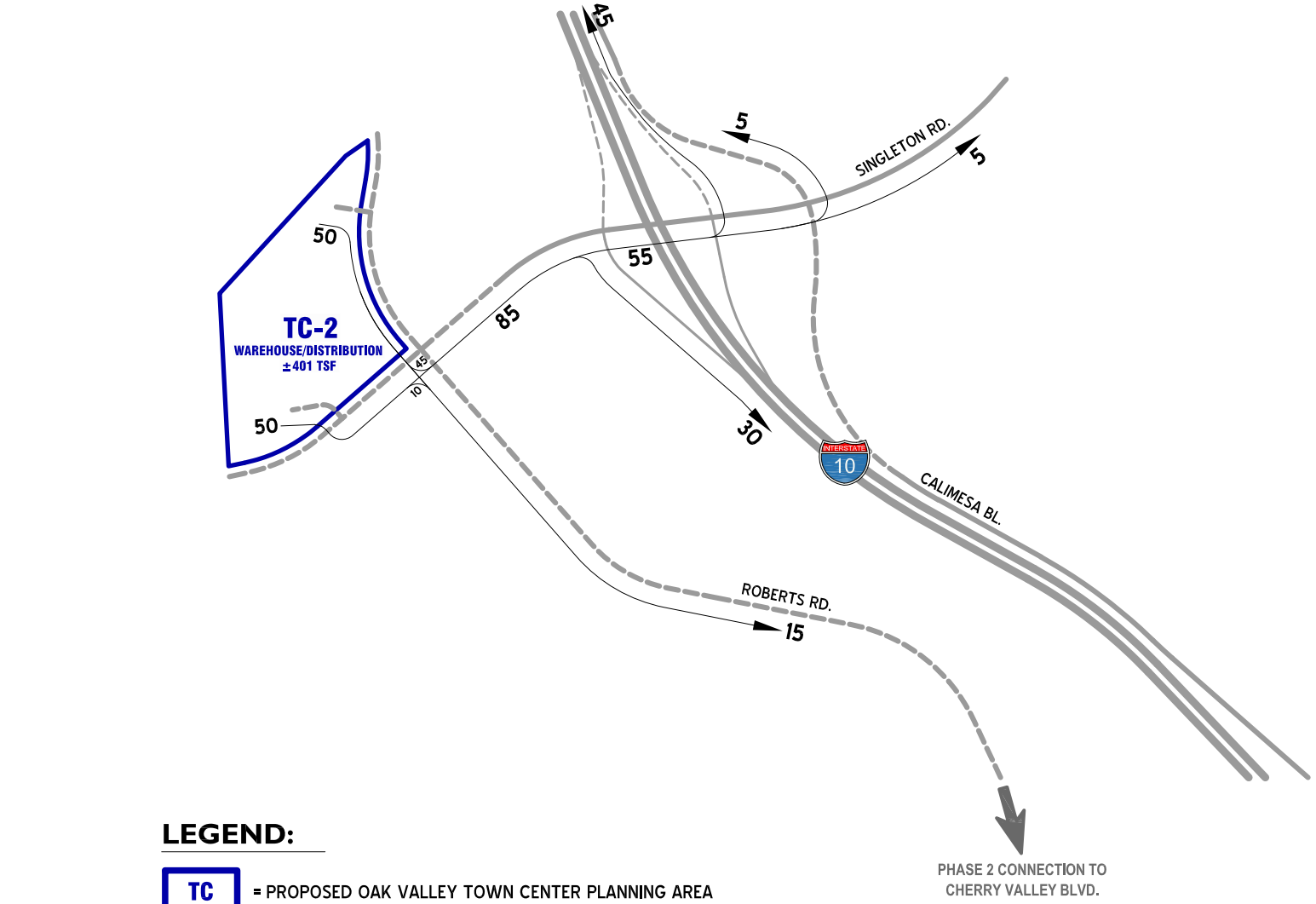
TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 8: PHASE 2 (2024) TC-2 PROJECT TRIP DISTRIBUTION



LEGEND:

TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 9: PHASE 2 (2024) TC-3 PROJECT TRIP DISTRIBUTION

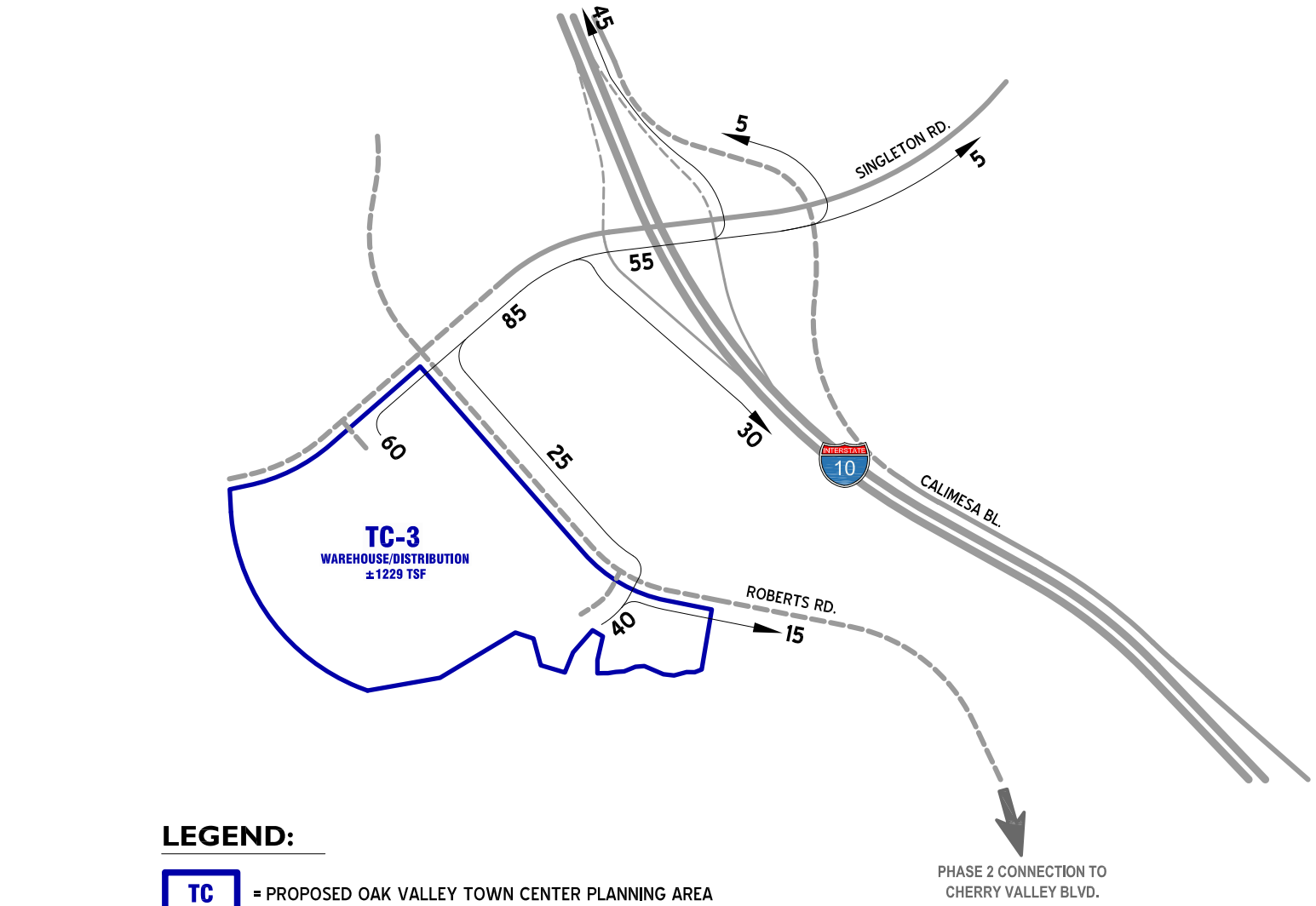
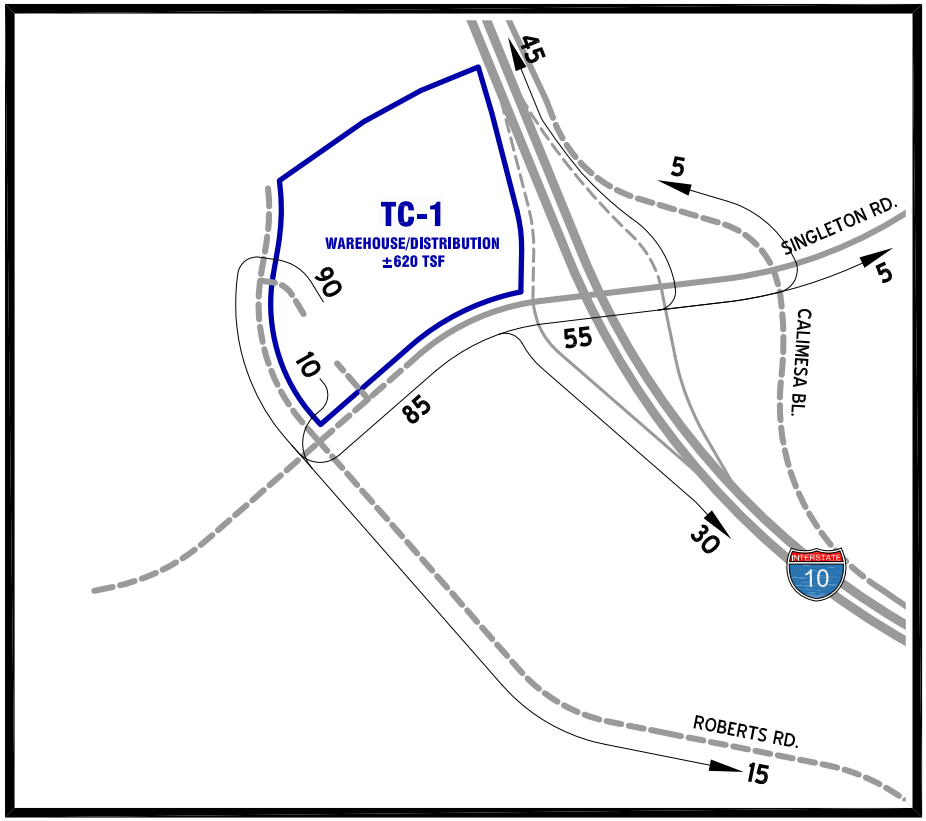
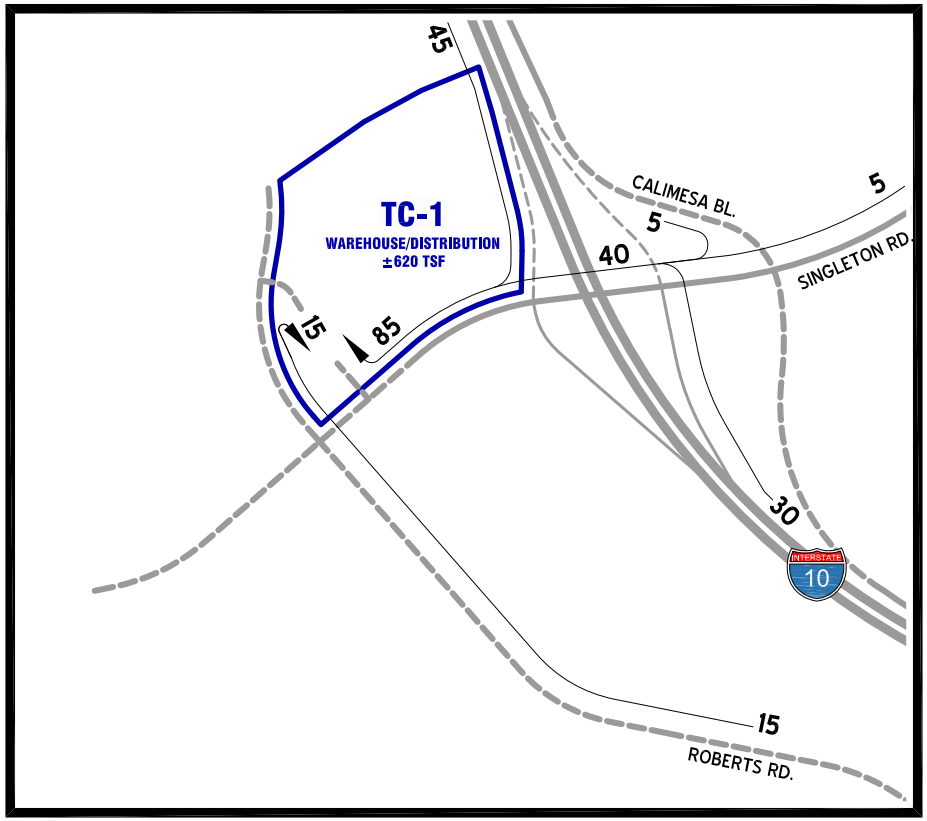


EXHIBIT 10: PHASE 3 (2026) TC-1 PROJECT TRIP DISTRIBUTION

OUTBOUND



INBOUND



LEGEND:

TC = PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA

= REALIGNMENT/FUTURE ROADWAY

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 11: PHASE 3 (2026) TC-2 PROJECT TRIP DISTRIBUTION

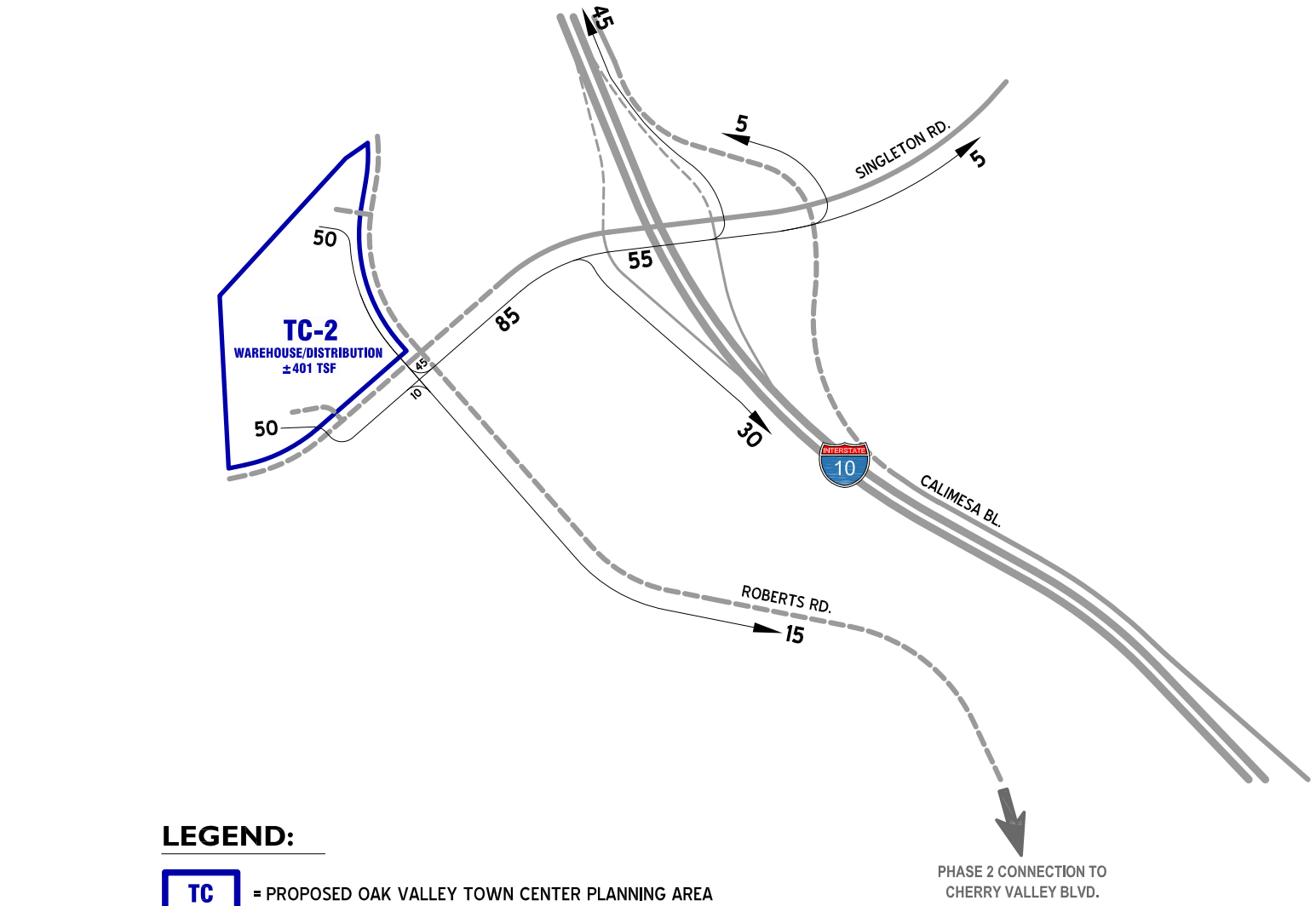


EXHIBIT 12: PHASE 3 (2026) TC-3 PROJECT TRIP DISTRIBUTION

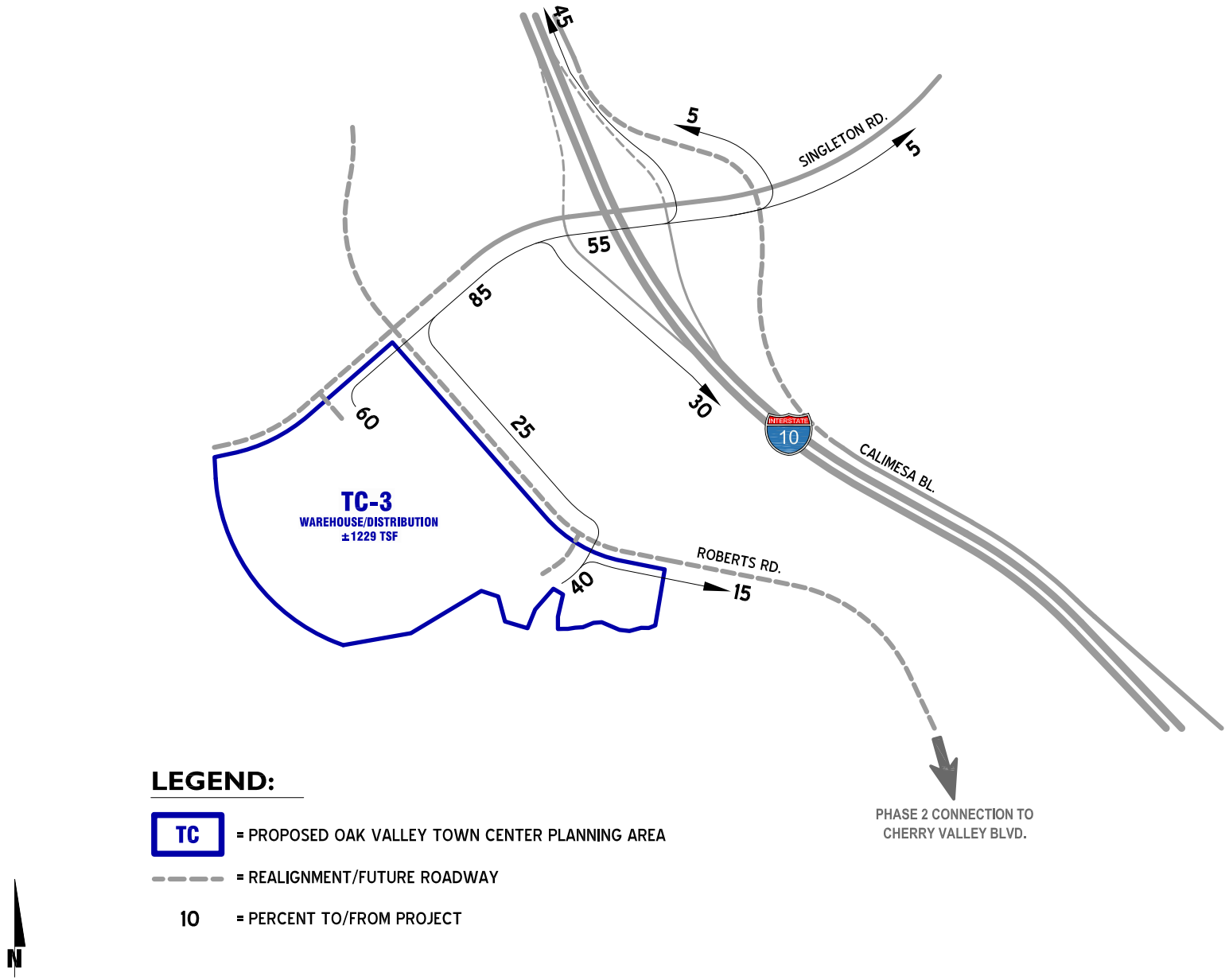


EXHIBIT 13: PHASE 3 (2026) TC-4 PROJECT TRIP DISTRIBUTION

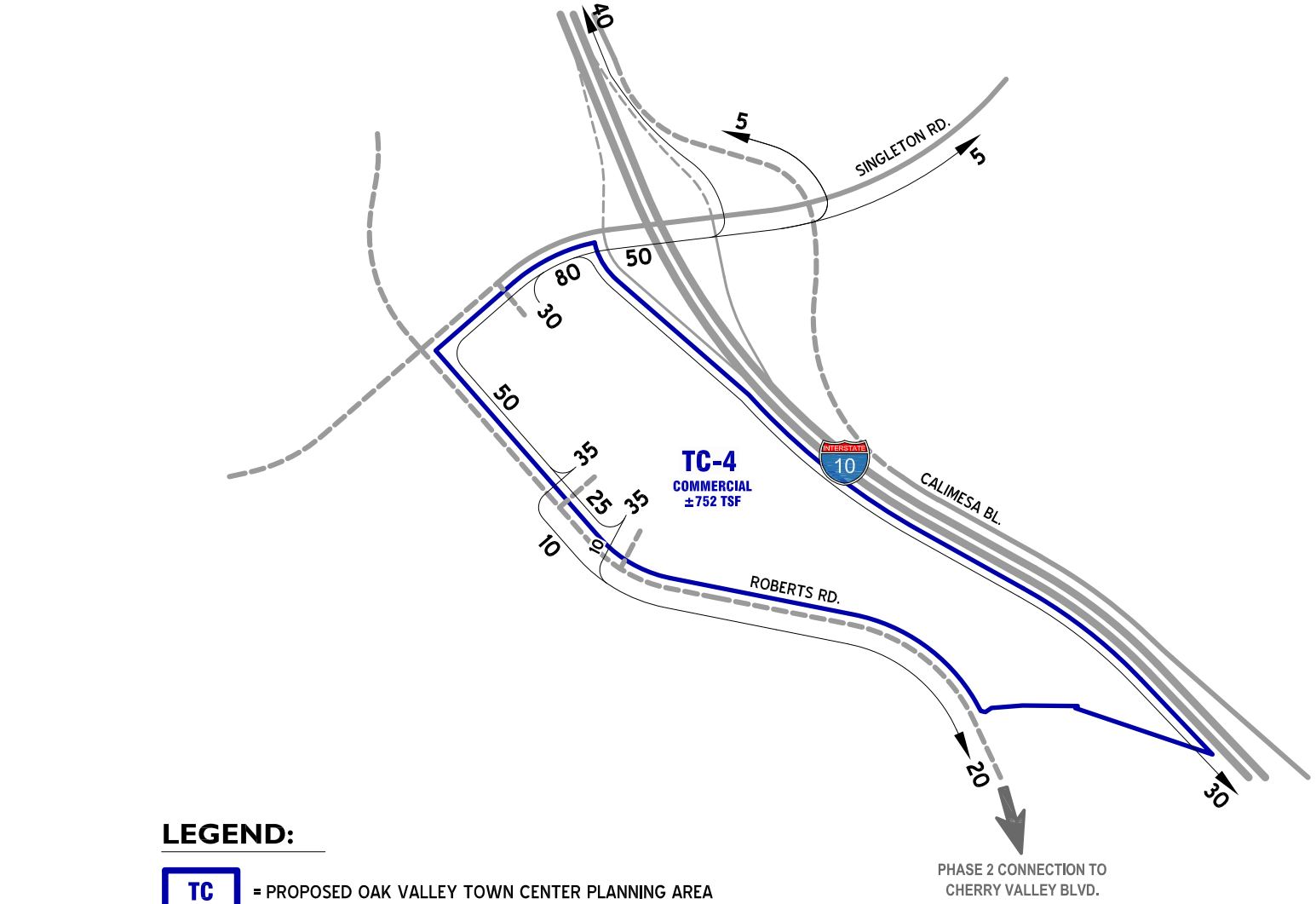
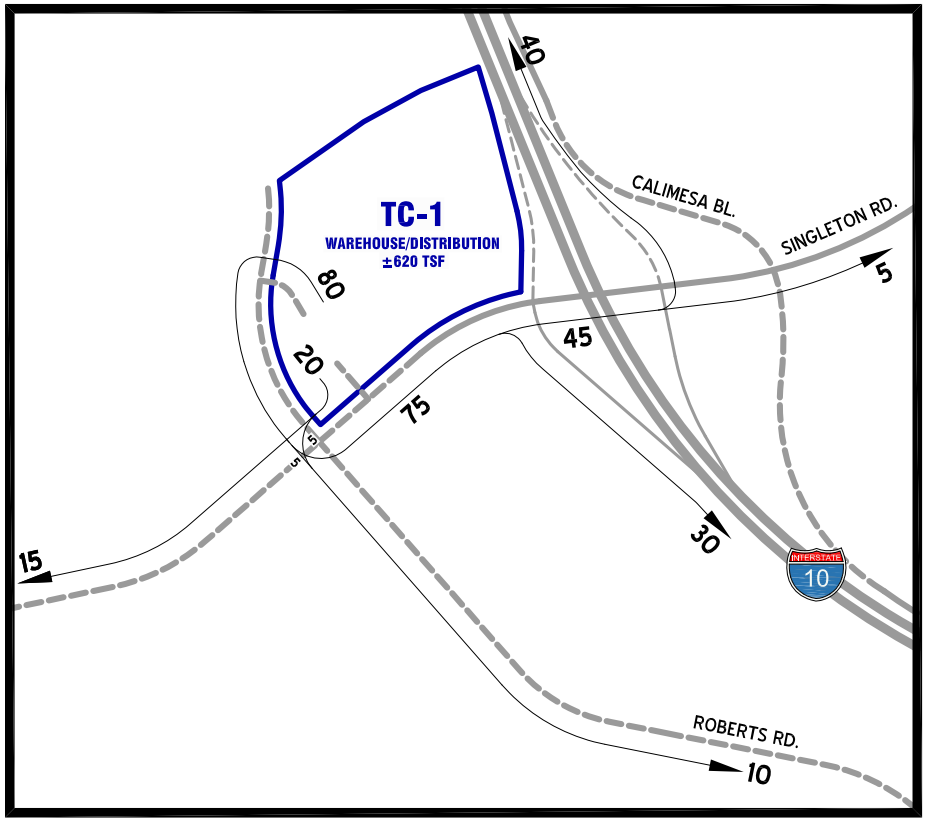
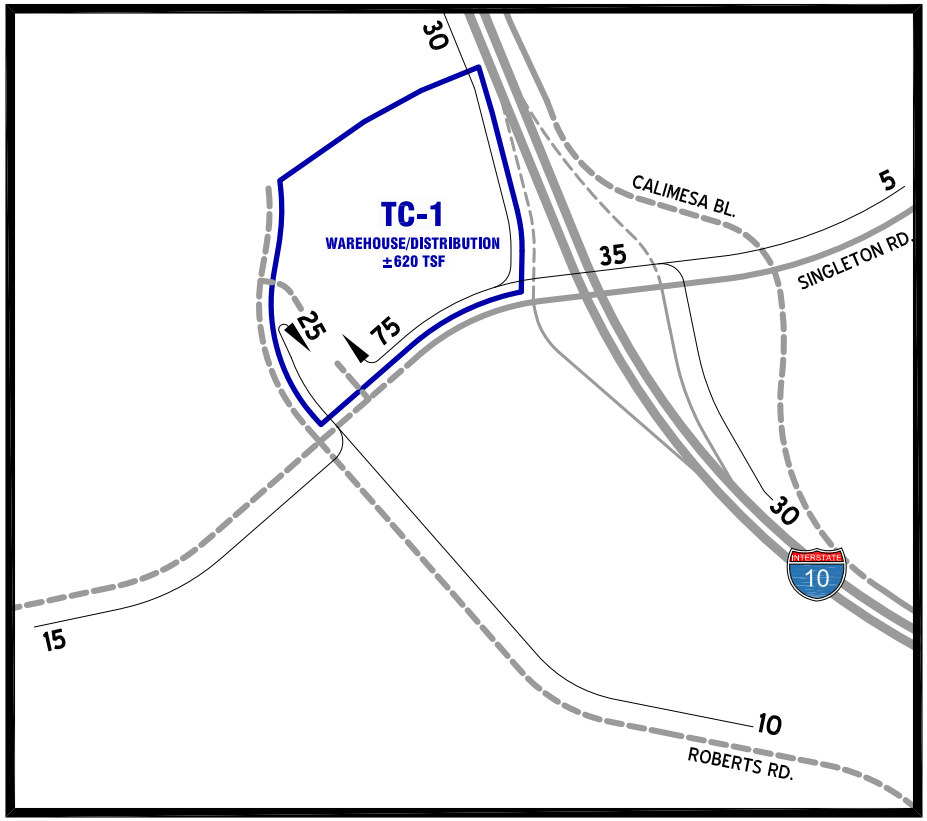


EXHIBIT 14: PHASE 4 (2030) TC-1 PROJECT TRIP DISTRIBUTION

OUTBOUND



INBOUND



LEGEND:

TC	= PROPOSED OAK VALLEY TOWN CENTER PLANNING AREA
- - - -	= REALIGNMENT/FUTURE ROADWAY
10	= PERCENT TO/FROM PROJECT

N

EXHIBIT 15: PHASE 4 (2030) TC-2 PROJECT TRIP DISTRIBUTION

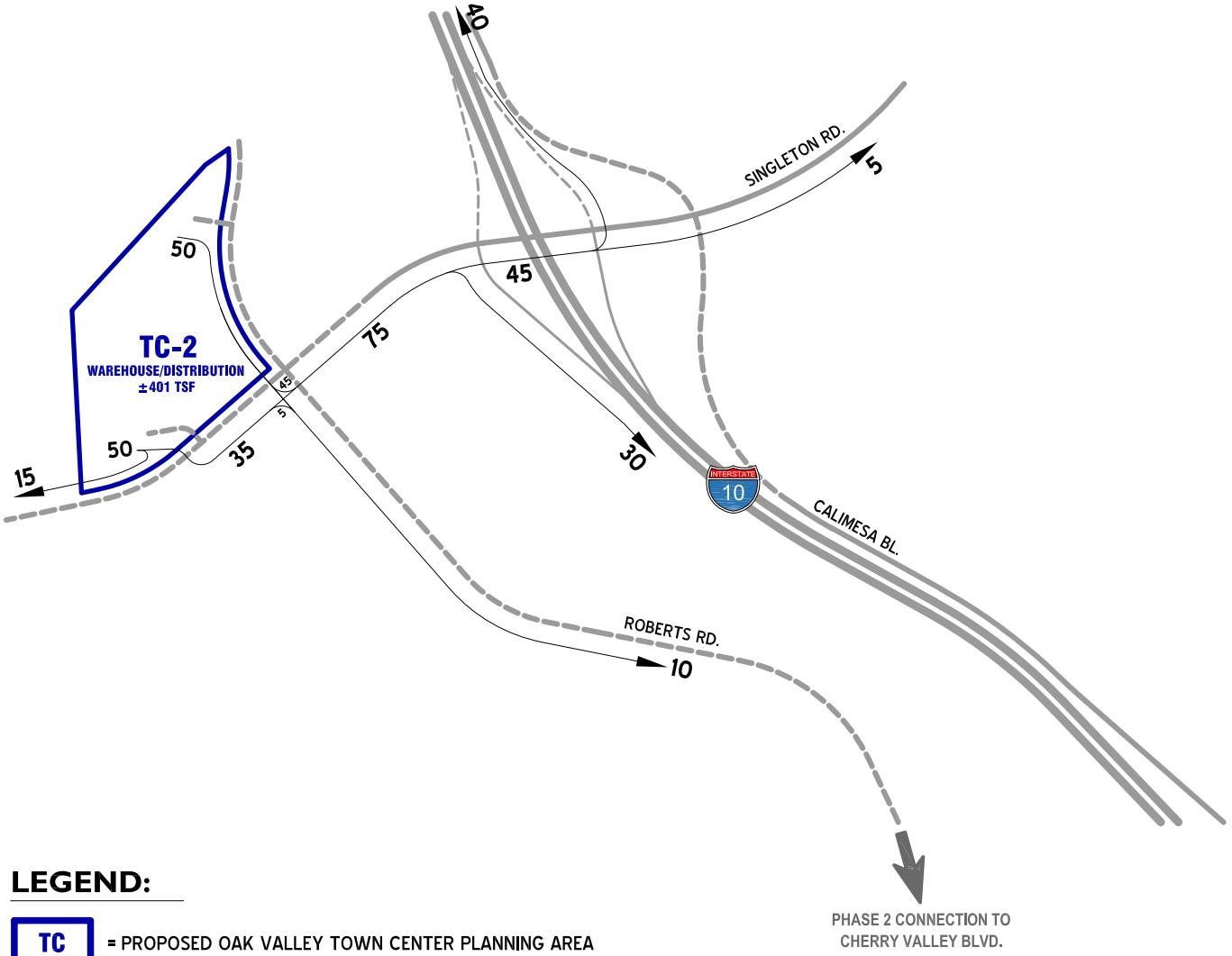


EXHIBIT 16: PHASE 4 (2030) TC-3 PROJECT TRIP DISTRIBUTION

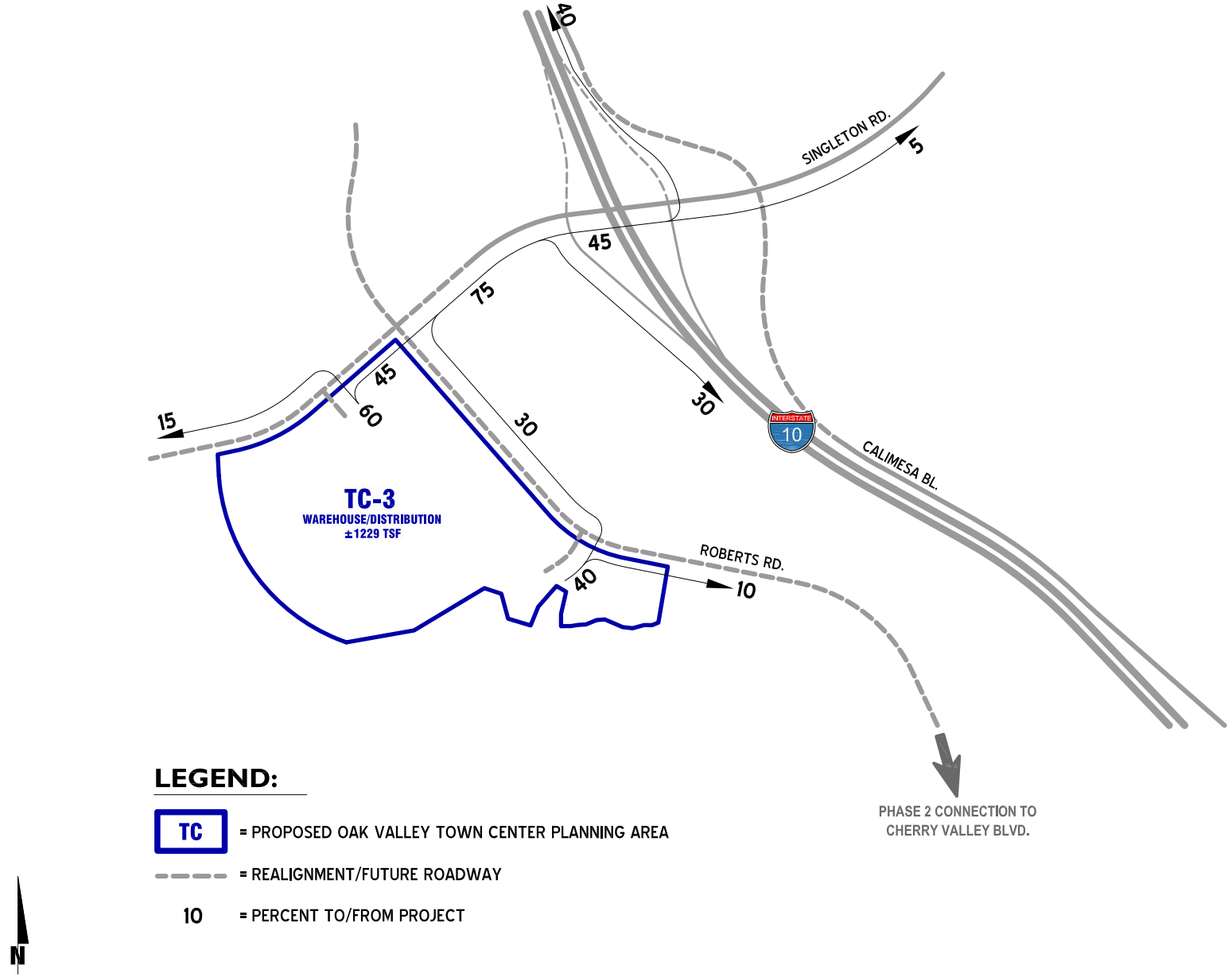


EXHIBIT 17: PHASE 4 (2026) TC-4 PROJECT TRIP DISTRIBUTION

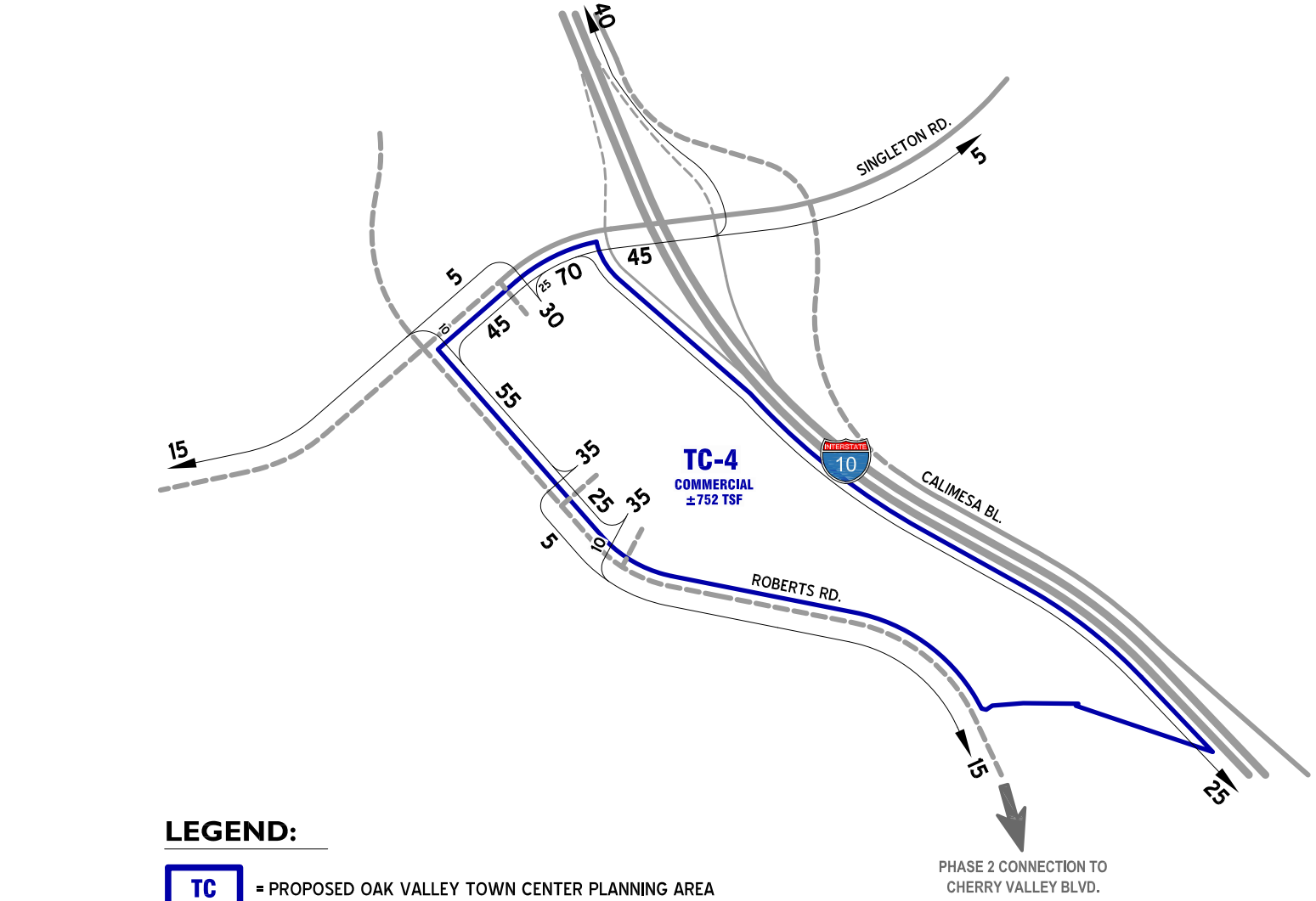


EXHIBIT 18: PHASE 1 (2022) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES

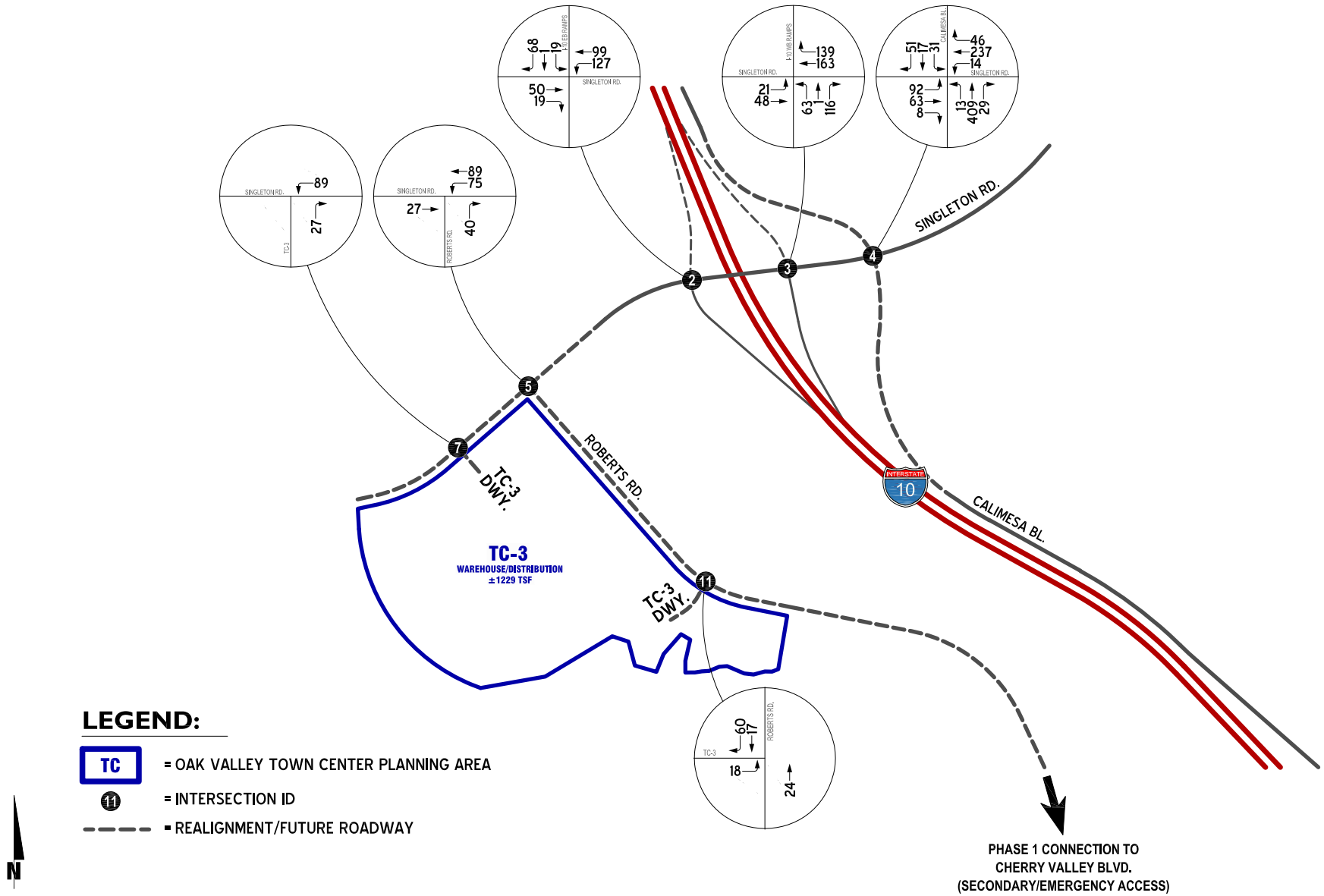


EXHIBIT 19: PHASE 1 (2022) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES

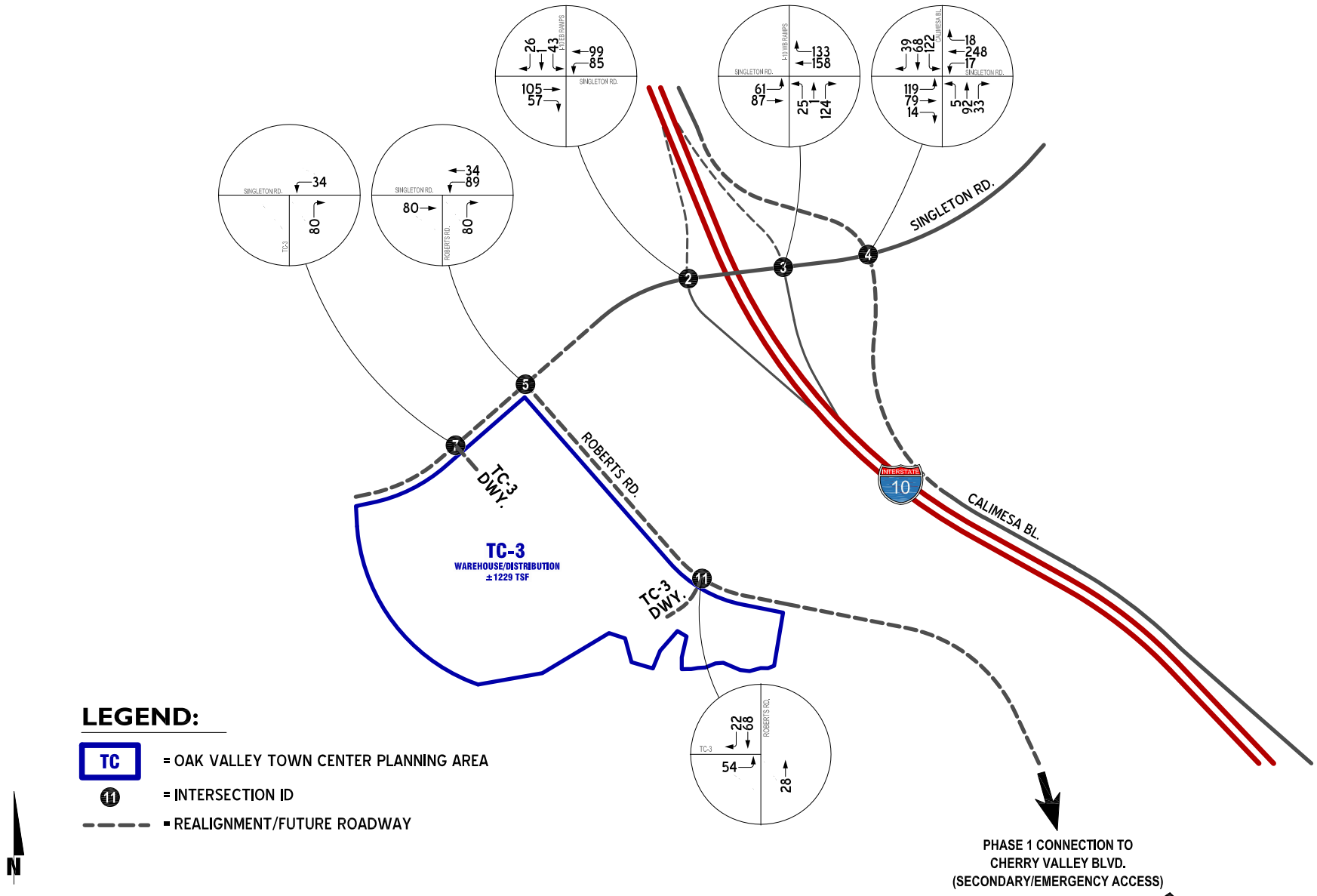


Table 10 summarizes the Oak Valley Town Center intersection analysis for Project Phase 1 (2022) conditions. Intersection analysis worksheets for Project Phase 1 (2022) conditions are included in Attachment 1.

Each study area intersection is anticipated to experience acceptable operations for Project Phase 1 conditions, with recommended lane configurations and traffic controls as illustrated on Exhibit 20. Lane improvements shown provide access to new roadway segments, freeway ramps, and driveways, but widening of the existing I-10/Singleton interchange bridge is not required for Project Phase 1 conditions.

PROJECT PHASE 2 (2024)

Exhibits 21 and 22 show AM and PM peak hour traffic volumes for 2024 conditions without and with Project Phase 2, respectively. Project Phase 2 (2024) includes additional Ambient growth traffic and Cumulative Development traffic.

The intersection analysis for Oak Valley Town Center Project Phase 2 (2024) is summarized on Table 11. Attachment 2 contains intersection analysis worksheets for Project Phase 2 (2024) conditions. Lane recommendations for Project Phase 2 (2024) conditions are shown on Exhibit 23. Project Phase 2 includes construction of the ultimate full-section width of Singleton Road from the western Project boundary to Roberts Road, construction of the ultimate full-section width of Roberts Road adjacent to the Phase 2 development areas north of Singleton Road, and the extension of Roberts Road south to the existing Roberts Road segment which allows connection with Cherry Valley Boulevard.

PROJECT PHASE 3 (2026)

AM and PM peak hour traffic volumes for 2026 conditions shown on Exhibit 24 (without Project) and Exhibit 25 (with Project Phase 3).

Table 12 summarizes the Oak Valley Town Center intersection analysis for Project Phase 3 (2026) conditions. Intersection analysis worksheets for Project Phase 3 (2026) conditions are included in Attachment 3.

Project Phase 3 (2026) is anticipated to experience acceptable operations with the lane recommendations presented on Exhibit 26. As shown on Exhibit 26, traffic signals are projected to be necessary to maintain acceptable levels of service for the following intersections:

- I-10 Eastbound Ramps / Singleton Road
- I-10 Westbound Ramps / Singleton Road
- Calimesa Boulevard / Singleton Road
- Roberts Road / Singleton Road

PROJECT BUILDOUT (PHASE 4, 2030)

Exhibits 27 and 28 show AM and PM peak hour traffic volumes for 2030 conditions without and with Project Buildout (Phase 4), respectively.

EXHIBIT 20: PHASE 1 (2022) CUMULATIVE IMPROVEMENTS

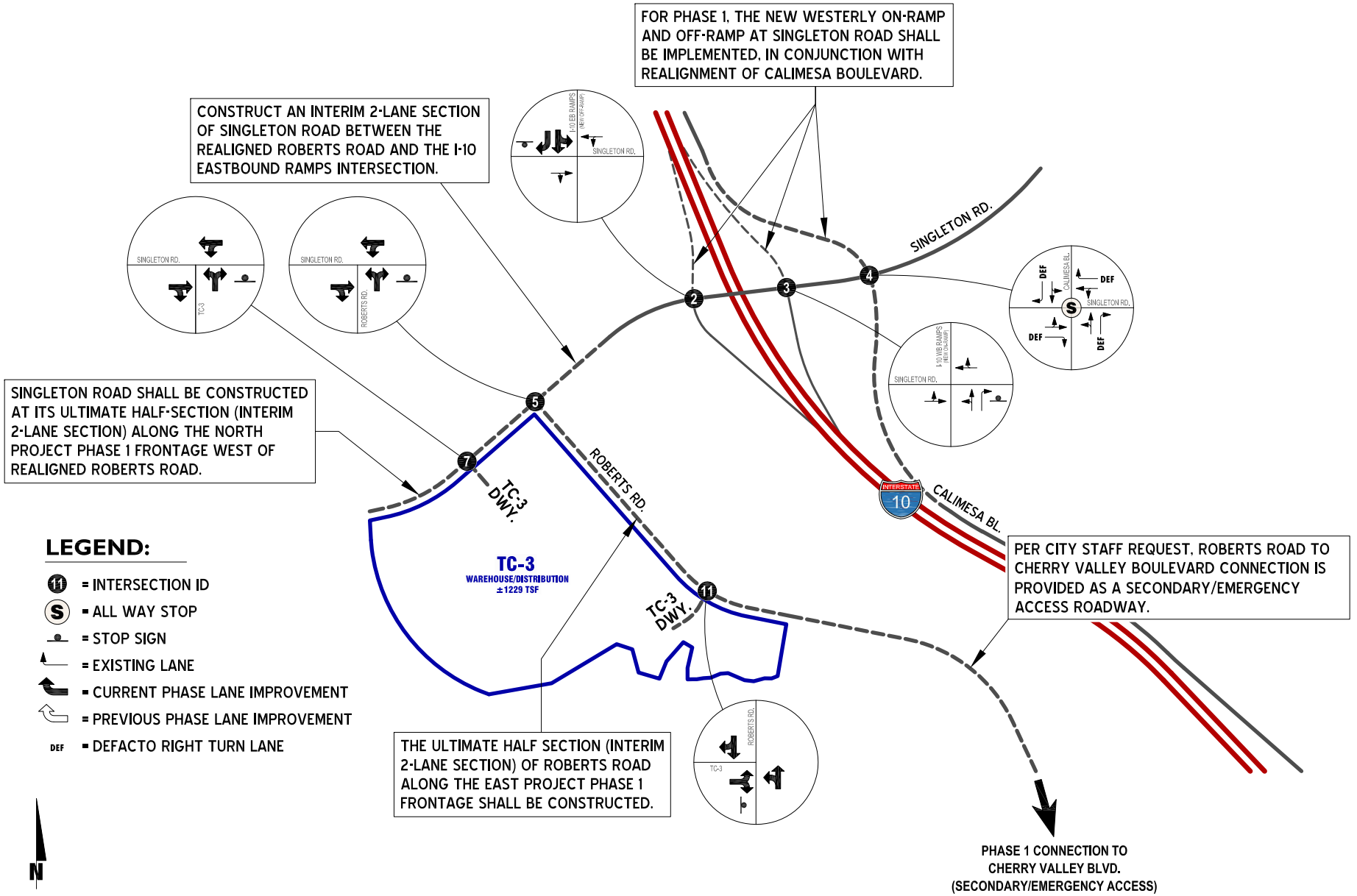


TABLE 10: OAK VALLEY TOWN CENTER INTERSECTION ANALYSIS FOR PHASE 1 (2022) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (Secs)		Level of Service[2]		Delay[2] (Secs)		Level of Service[2]	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
2	I-10 EB Ramps / Singleton Rd.	CSS	0	0	0	**0.5**	**0.5**	**1**	0	1	0	0.5	0.5	0	11.1	10.9	B	B	12.3	12.4	B	B
3	I-10 WB Ramps / Singleton Rd.	CSS	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	10.1	10.3	B	B	11.4	12.3	B	B
4	Calimesa Bl. / Singleton Rd.	AWS	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	18.4	12.2	C	B	19.5	12.4	C	B
5	Roberts Rd. / Singleton Rd.																					
	- With Existing Roberts Rd.	CSS	0	1	0	0	1	0	0	0	0	0	1!	0	8.7	8.9	A	A	-	-	-	-
	- With Realigned Roberts Rd.	**CSS**	***1***	**1!**	0	0	0	0	0	**1**	0	**1**	1	0	-	-	-	-	8.7	9.1	A	A
6	TC-4 N. Dwy. / Singleton Rd.	-	*Future Intersection*												-	-	-	-	-	-	-	-
7	TC-3 Dwy. / Singleton Rd.	**CSS**	0	**1!**	0	0	0	0	0	**1**	0	**1**	**1**	0	-	-	-	-	8.5	8.6	A	A
8	TC-1 S. Dwy. / Singleton Rd.	-	*Future Intersection*												-	-	-	-	-	-	-	-
9	Roberts Rd. / TC-1 & TC-2 Dwy.	-	*Future Intersection*												-	-	-	-	-	-	-	-
10	Roberts Rd. / TC-4 W. Dwy.	-	*Future Intersection*												-	-	-	-	-	-	-	-
11	Roberts Rd. / TC-3 Dwy.	**CSS**	0	**1**	0	0	**1**	0	0	**1!**	0	0	0	0	-	-	-	-	9.0	9.4	A	A

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Righ Turn Lane; 0.5 = Shared turn lane; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service (LOS) are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All-Way Stop

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EXHIBIT 21: PHASE 2 (2024) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES

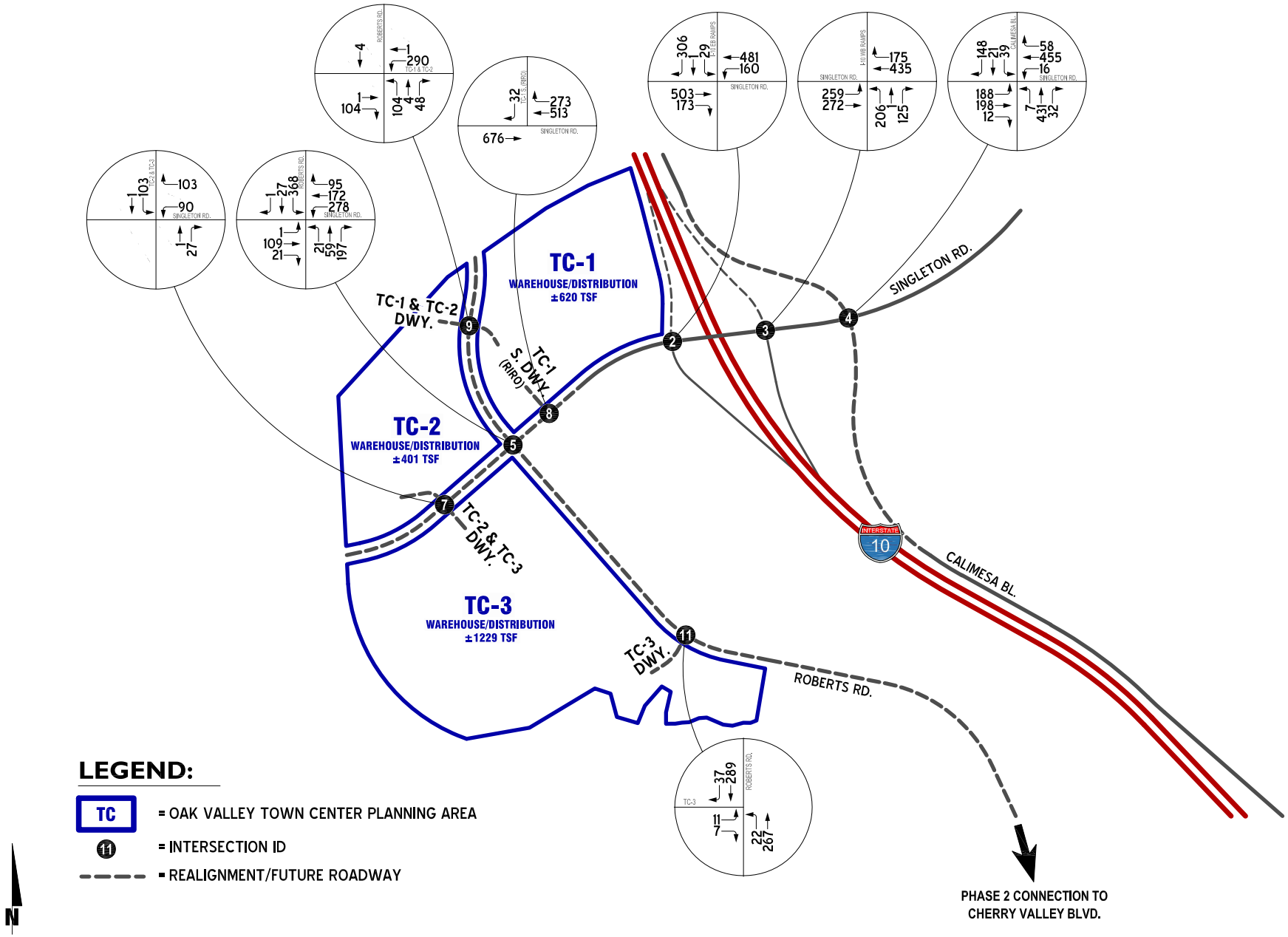

EXHIBIT 22: PHASE 2 (2024) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES

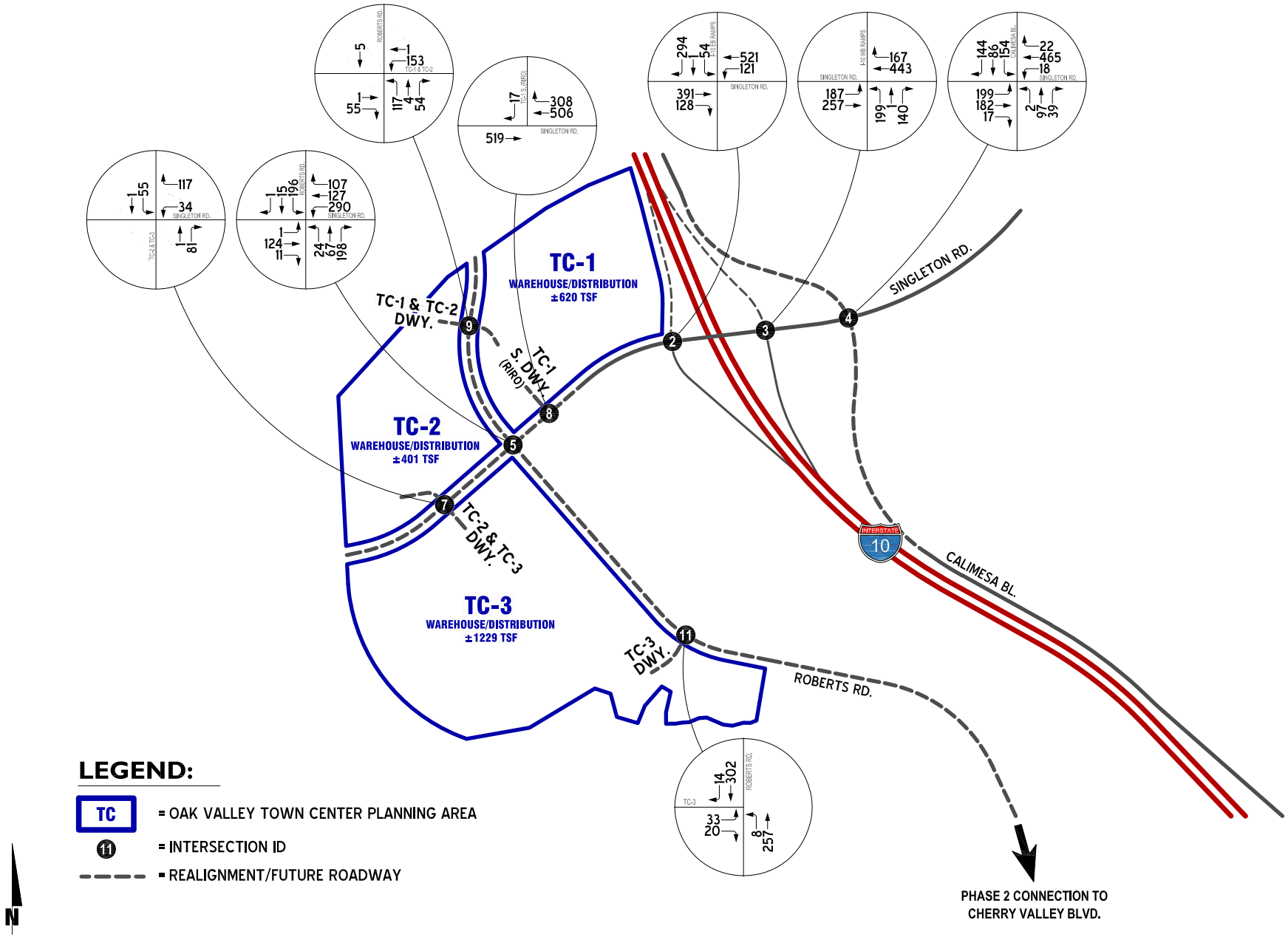

EXHIBIT 23: PHASE 2 (2024) CUMULATIVE IMPROVEMENTS

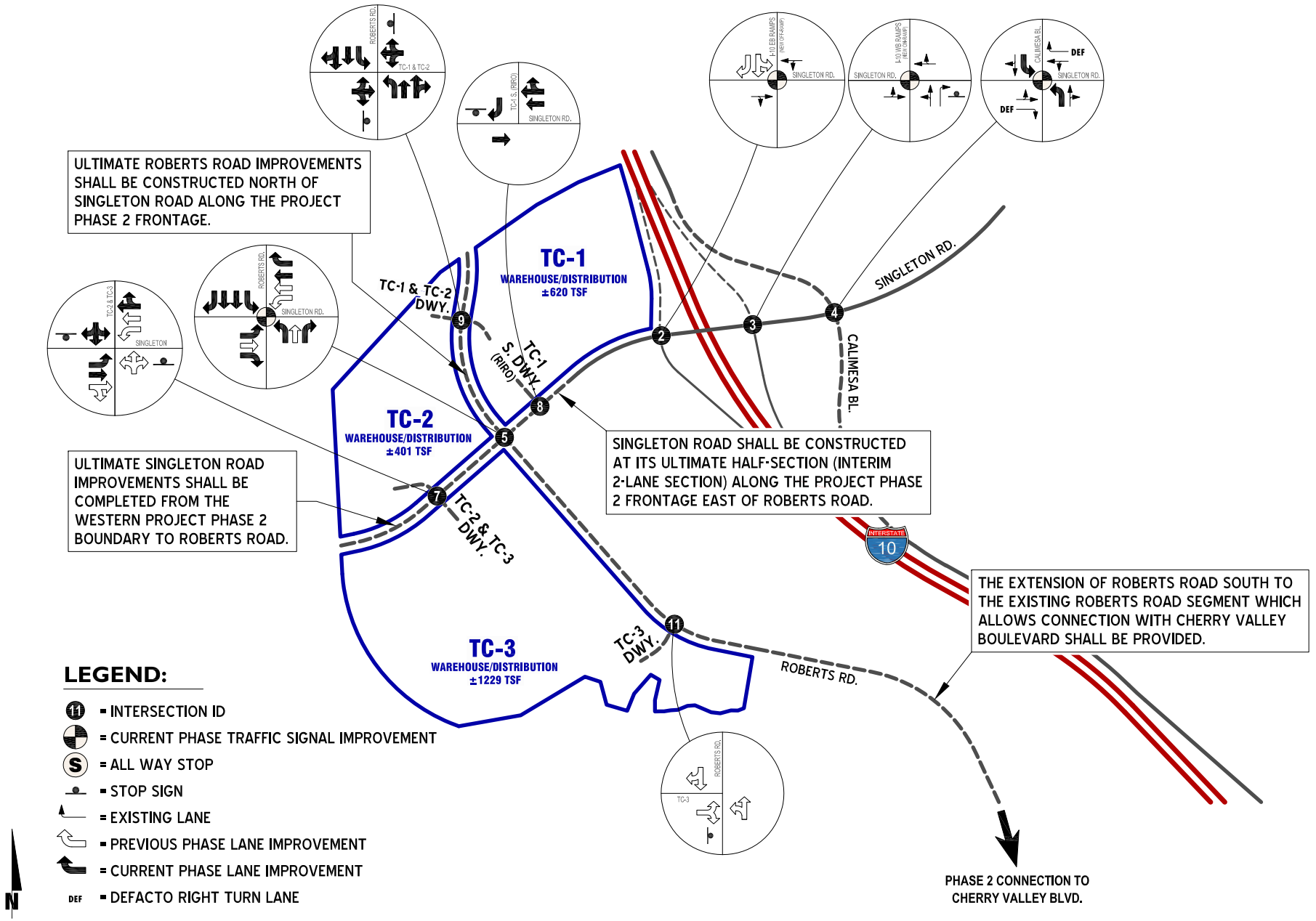

TABLE 11: OAK VALLEY TOWN CENTER INTERSECTION ANALYSIS FOR PHASE 2 (2024) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (Secs)		Level of Service[2]		Delay[2] (Secs)		Level of Service[2]	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
2	I-10 EB Ramps / Singleton Rd.																					
	- With Ramp Improvements	CSS	0	0	0	**0.5**	**0.5**	**1**	0	1	0	0.5	0.5	0	17.9	17.5	C	C	**61.5**	**49.1**	**F**	**E**
	- With Additional Improvements	**TS**	0	0	0	**0.5**	**0.5**	**1**	0	1	0	0.5	0.5	0	**-**	**-**	-	-	35.5	30.1	D	C
3	I-10 WB Ramps / Singleton Rd.	CSS																				
	- With Ramp Improvements	CSS	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	14.4	10.5	B	B	**>80**	**>80**	**F**	**F**
	- With Additional Improvements	**TS**	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	**-**	**-**	-	-	13.1	13.5	B	B
4	Calimesa Bl. / Singleton Rd.																					
	- Without Improvements	AWS	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	**64.3**	31.1	**F**	D	**>80**	43.3	**F**	**E**
	- With Improvements	**TS**	**1**	1	0	**1**	1	0	0.5	0.5	d	0.5	0.5	d	20.9	20.6	C	C	21.0	17.6	C	B
5	Roberts Rd. / Singleton Rd.																					
	- With Existing Roberts Rd.	CSS	0	1	0	0	1	0	0	0	0	0	1!	0	10.4	10.8	B	B	**>80**	**>80**	**F**	**F**
	- With Realigned Roberts Rd.	**TS**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	-	-	-	-	49.2	45.0	D	D
6	TC-4 N. Dwy. / Singleton Rd.	-	*Future Intersection*												-	-	-	-	-	-	-	-
7	TC-2 & TC-3 Dwy. / Singleton Rd.	**CSS**	0	**1!**	0	0	**1!**	0	**1**	**2**	0	**1**	**2**	0	-	-	-	-	12.0	10.3	B	B
8	TC-1 S. Dwy. / Singleton Rd.	**CSS**	0	0	0	0	0	**1**	0	**1**	0	0	**2**	0	-	-	-	-	11.7	11.6	B	B
9	Roberts Rd. / TC-1 & TC-2 Dwy.	**CSS**	**1**	**2**	0	**1**	**2**	0	0	**1!**	0	0	**1!**	0	-	-	-	-	19.0	14.0	C	B
10	Roberts Rd. / TC-4 W. Dwy.	-	*Future Intersection*												-	-	-	-	-	-	-	-
11	Roberts Rd. / TC-3 Dwy.	**CSS**	0	**1**	0	0	**1**	0	0	**1!**	0	0	0	0	-	-	-	-	12.6	12.9	B	B

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Righ Turn Lane; 0.5 = Shared turn lane; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service (LOS) are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[3] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All-Way Stop

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EXHIBIT 24: PHASE 3 (2026) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES

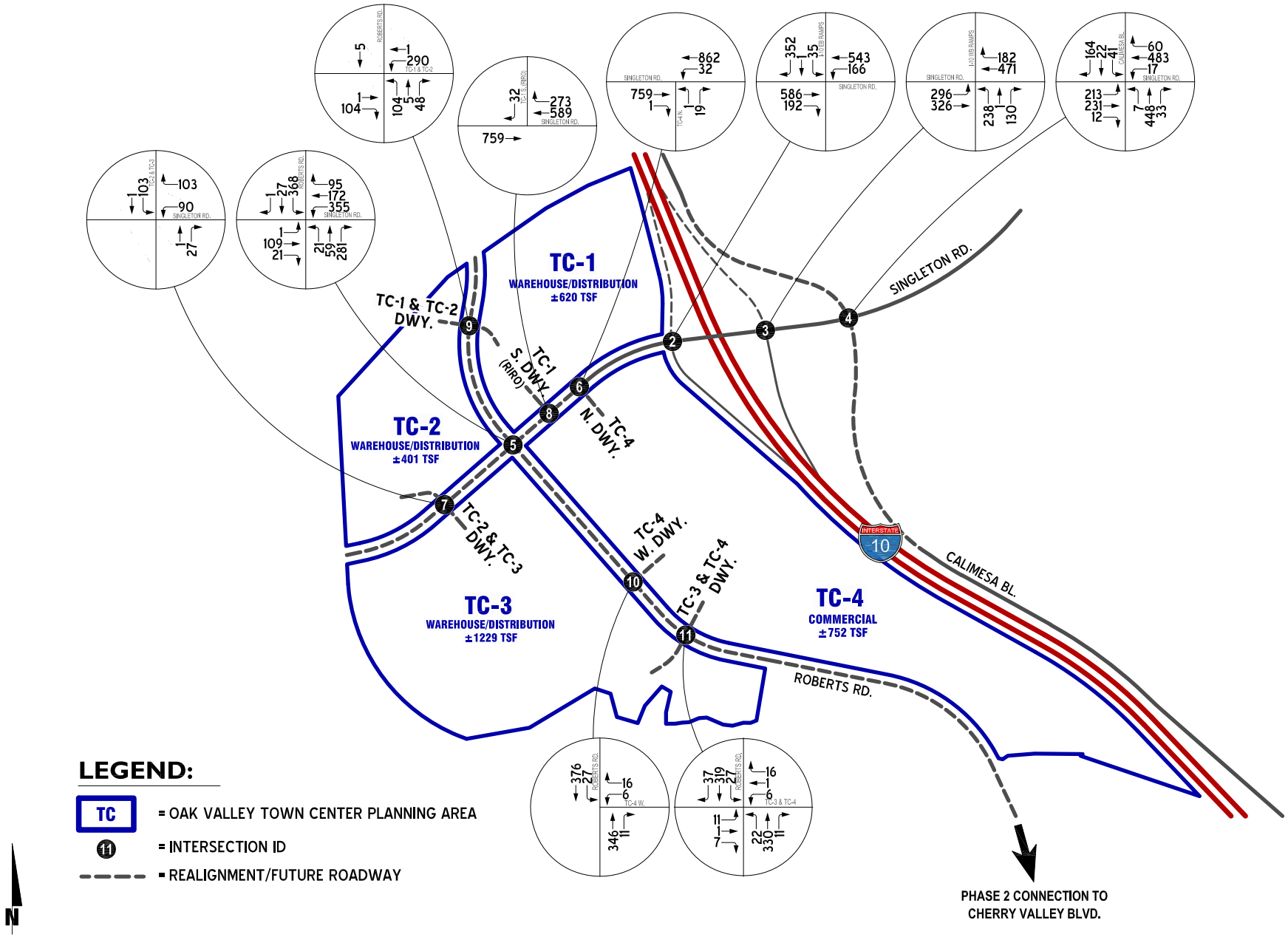

EXHIBIT 25: PHASE 3 (2026) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES

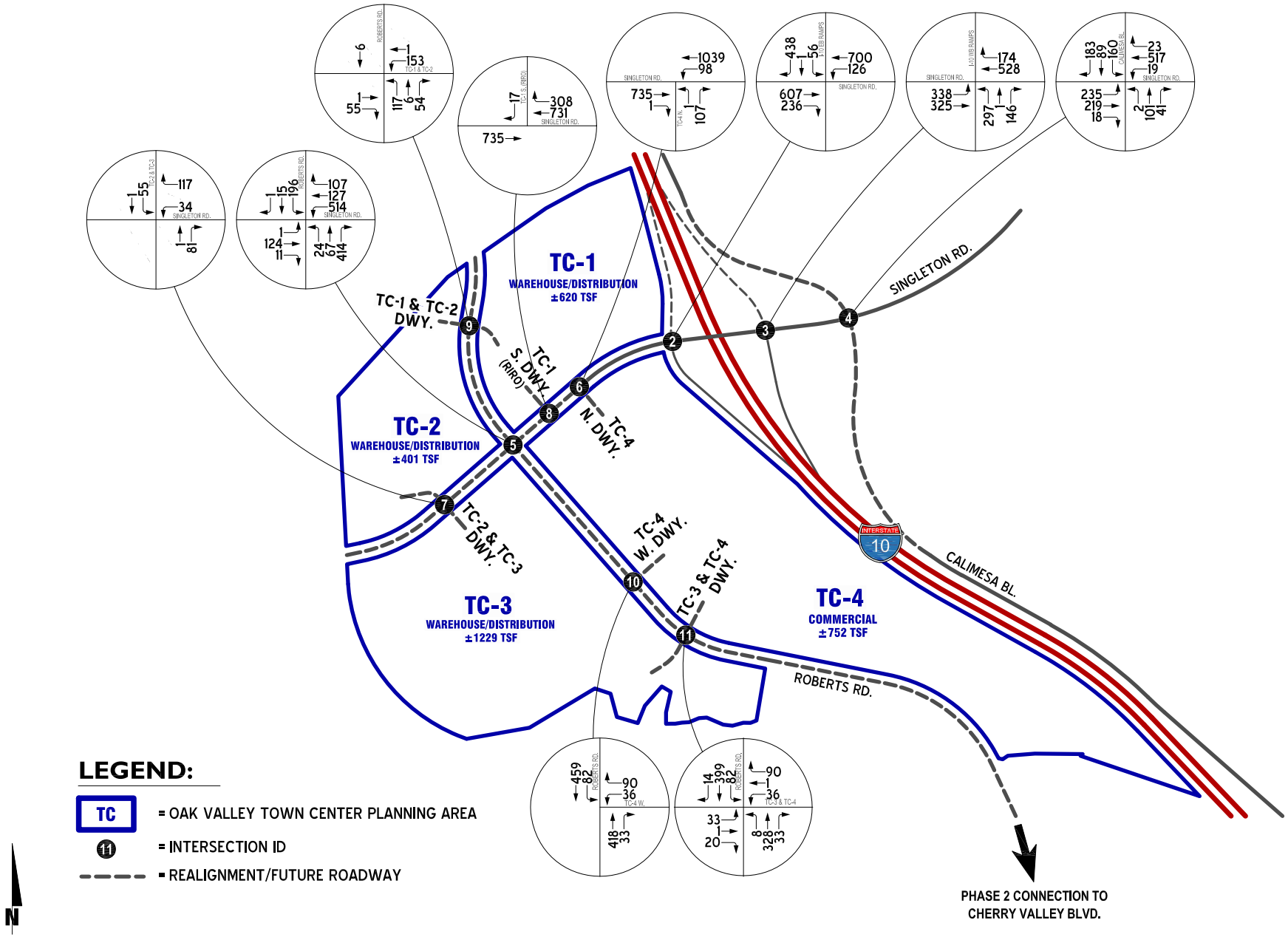

EXHIBIT 26: PHASE 3 (2026) CUMULATIVE IMPROVEMENTS

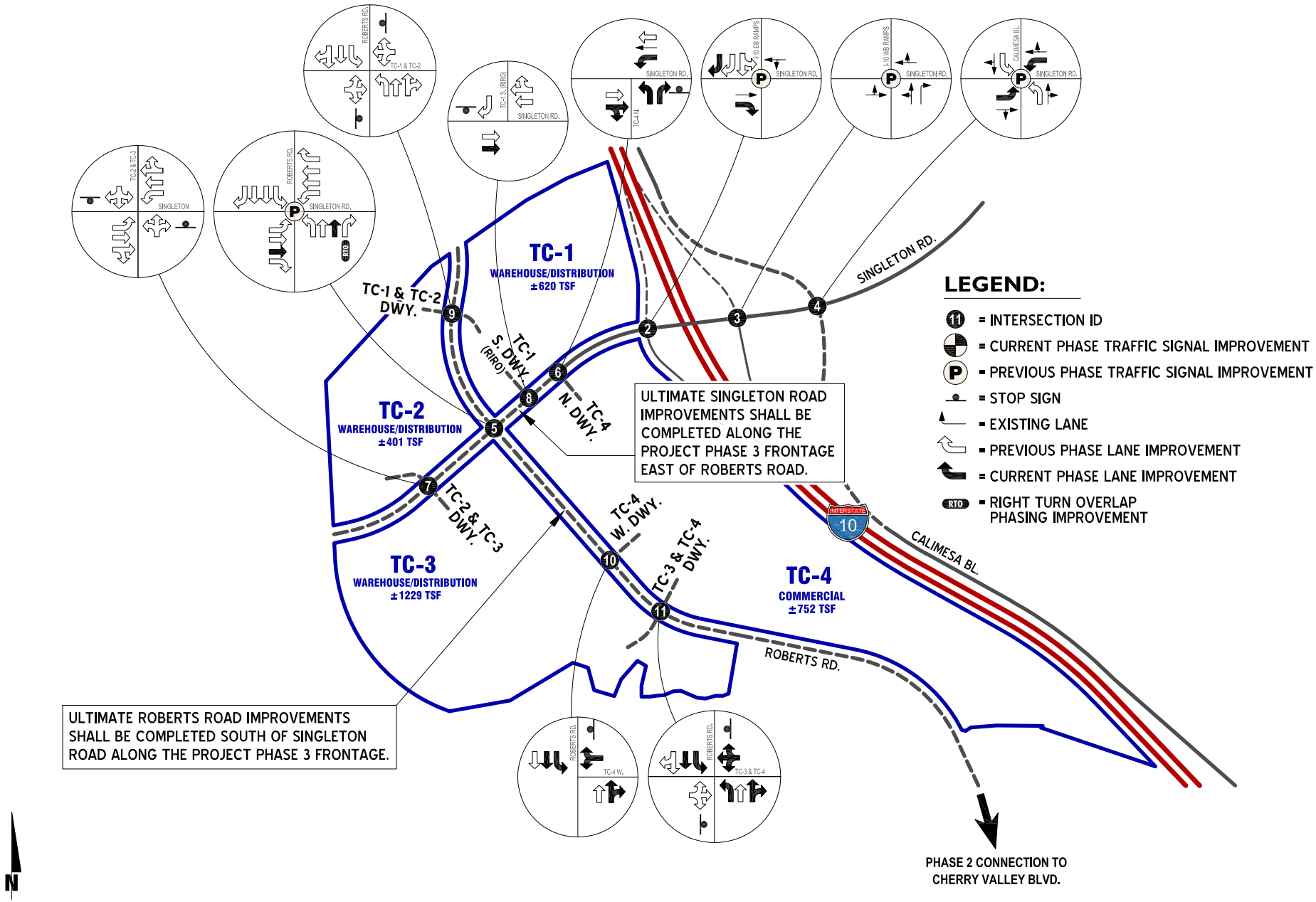

TABLE 12: OAK VALLEY TOWN CENTER INTERSECTION ANALYSIS FOR PHASE 3 (2026) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (Secs)		Level of Service[2]		Delay[2] (Secs)		Level of Service[2]	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
2	I-10 EB Ramps / Singleton Rd.																					
	- With Ramp Improvements	CSS	0	0	0	**0.5**	**0.5**	**1**	0	1	0	0.5	0.5	0	20.6	20.2	C	C	**>80**	**>80**	**F**	**F**
	- With Additional Improvements	**TS**	0	0	0	**0.5**	**0.5**	**2**	0	1	**1**	0.5	0.5	0	**-**	**-**	-	-	27.9	17.5	C	B
3	I-10 WB Ramps / Singleton Rd.	CSS																				
	- With Ramp Improvements	CSS	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	10.9	16.2	B	C	**>80**	**>80**	**F**	**F**
	- With Additional Improvements	**TS**	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	**-**	**-**	-	-	15.0	24.5	B	C
4	Calimesa Bl. / Singleton Rd.																					
	- Without Improvements	AWS	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	**88.3**	**44.9**	**F**	**E**	**>80**	**76.1**	**F**	**F**
	- With Improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	32.8	27.9	C	C	35.5	28.5	D	C
5	Roberts Rd. / Singleton Rd.																					
	- With Existing Roberts Rd.	CSS	0	1	0	0	1	0	0	0	0	0	1!	0	10.9	11.8	B	B	**>80**	**>80**	**F**	**F**
	- With Realigned Roberts Rd.	**TS**	**1**	**2**	**1>**	**1**	**2**	**1**	**1**	**2**	**1**	**1**	**2**	**1**	-	-	-	-	47.3	37.5	D	D
6	TC-4 N. Dwy. / Singleton Rd.	**CSS**	**1**	**0**	**1**	0	0	0	0	**2**	0	**1**	**2**	0	-	-	-	-	32.3	13.0	D	B
7	TC-2 & TC-3 Dwy. / Singleton Rd.	**CSS**	0	**1!**	0	0	**1!**	0	**1**	**2**	0	**1**	**2**	0	-	-	-	-	12.0	10.3	B	B
8	TC-1 S. Dwy. / Singleton Rd.	**CSS**	0	0	0	0	0	**1**	0	**2**	0	0	**2**	0	-	-	-	-	12.1	13.0	B	B
9	Roberts Rd. / TC-1 & TC-2 Dwy.	**CSS**	**1**	**2**	0	**1**	**2**	0	0	**1!**	0	0	**1!**	0	-	-	-	-	19.1	14.1	C	B
10	Roberts Rd. / TC-4 W. Dwy.	**CSS**	0	**2**	0	**1**	**2**	0	0	**1!**	0	0	0	0	-	-	-	-	10.9	15.3	B	C
11	Roberts Rd. / TC-3 Dwy.	**CSS**	**1**	**2**	0	**1**	**2**	0	0	**1!**	0	0	**1!**	0	-	-	-	-	13.8	19.7	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Righ Turn Lane; 0.5 = Shared turn lane; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service (LOS) are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[3] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All-Way Stop

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EXHIBIT 27: PHASE 4 (2030) WITH PROJECT AM PEAK HOUR INTERSECTION VOLUMES

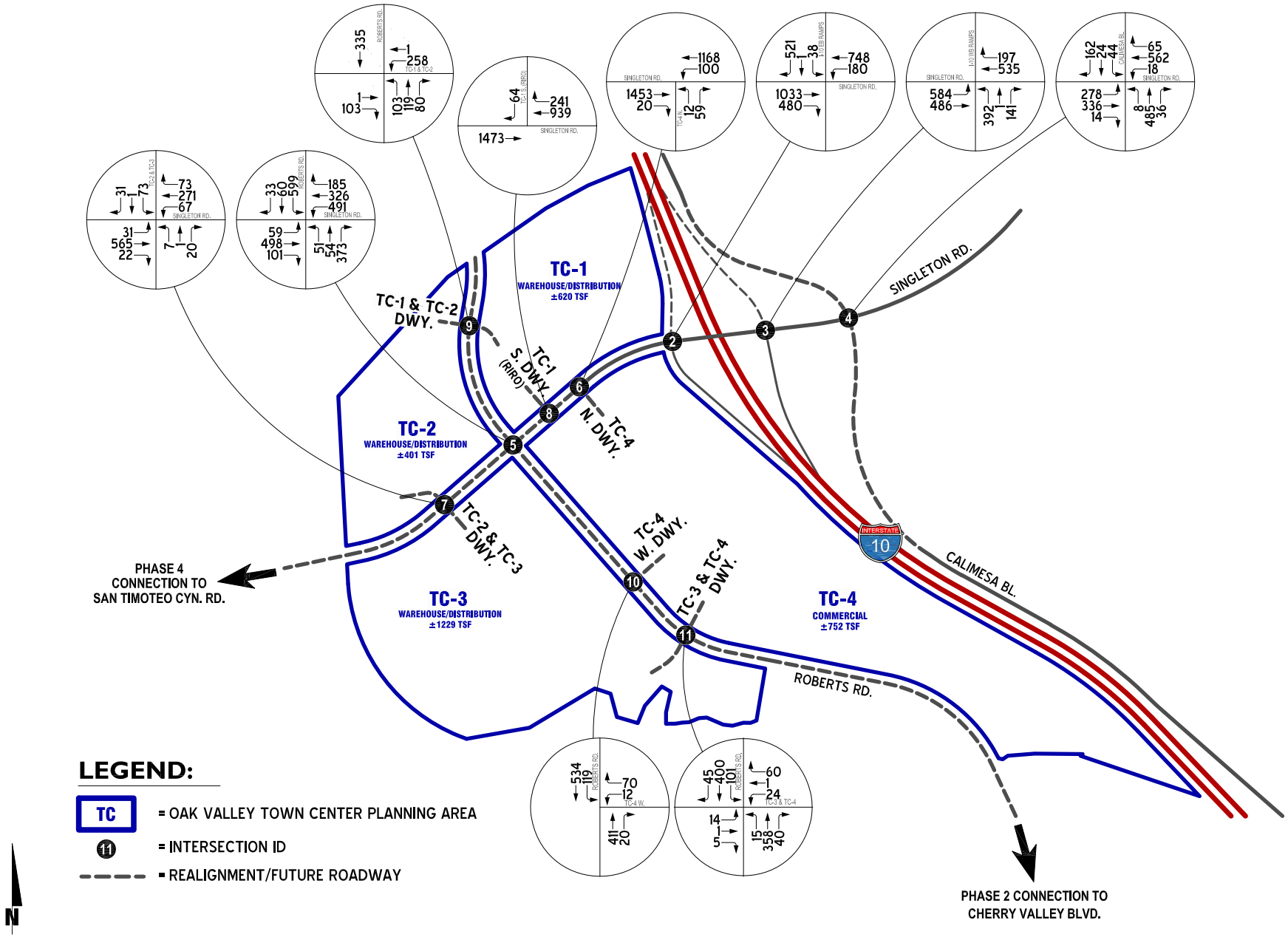
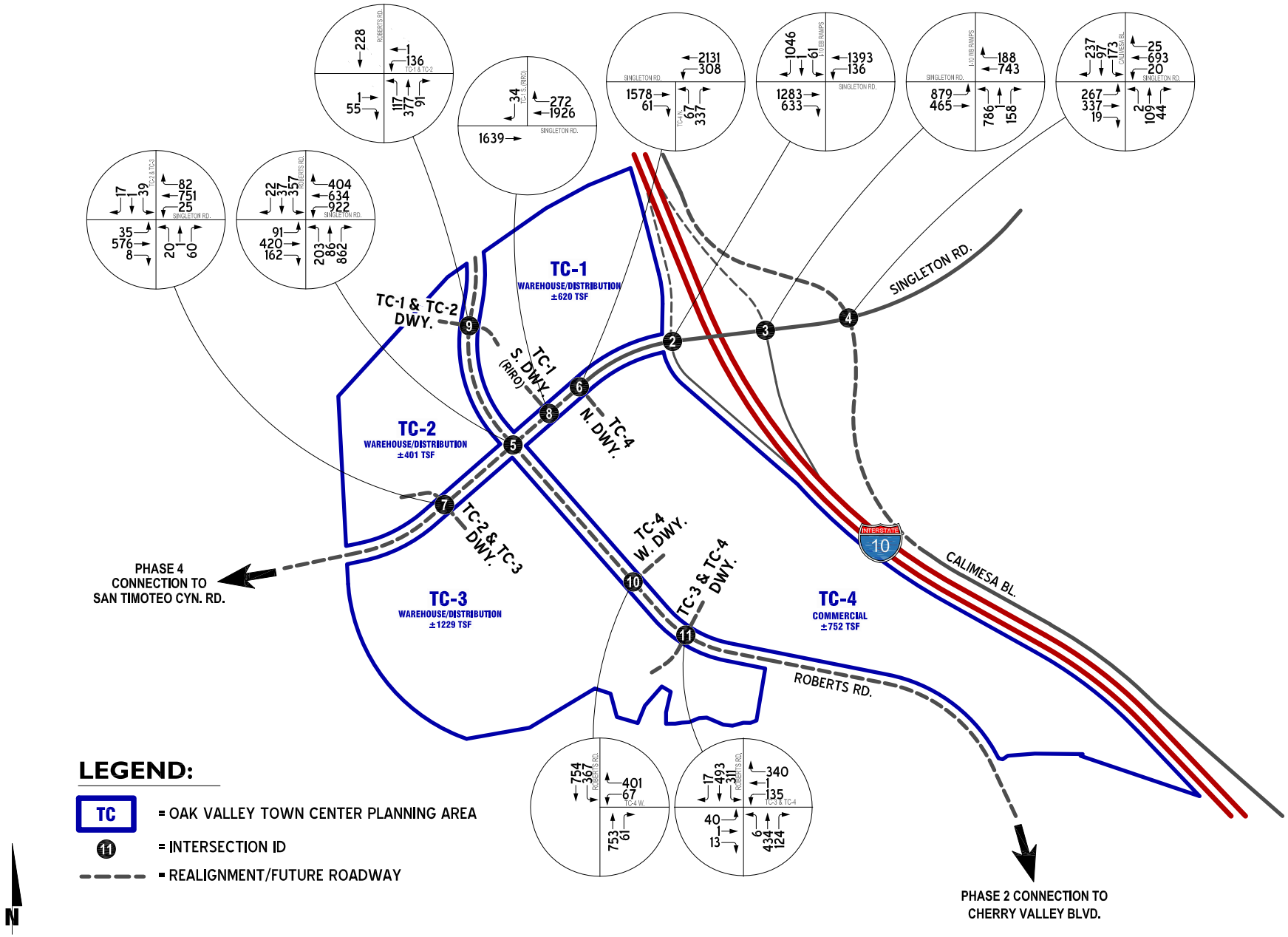


EXHIBIT 28: PHASE 4 (2030) WITH PROJECT PM PEAK HOUR INTERSECTION VOLUMES



The intersection analysis for Oak Valley Town Center Project Phase 4 (2030) is summarized on Table 13. Attachment 4 contains intersection analysis worksheets for Project Phase 4 (2030) conditions.

Phase 4 (2030) is anticipated to experience acceptable operations with the lane recommendations presented on Exhibit 29. The extension of Singleton Road westerly to connect to San Timoteo Canyon Road and extensive widening and reconstruction of the existing I-10/Singleton interchange bridge are included for Project Phase 4 conditions

RECOMMMENDATIONS

The updated improvement recommendations by phase are summarized below.

For Project Phase 1 (2022) conditions, the following improvements are recommended:

Singleton Road shall be constructed at its ultimate half-section (interim 2-lane section) along the north Project Phase 1 frontage west of realigned Roberts Road.

The ultimate half section (interim 2-lane section) of Roberts Road along the east Project Phase 1 frontage shall be constructed. In addition, Phase 1 includes the connection of Roberts Road to Cherry Valley Boulevard as a secondary/emergency access roadway, per City staff request.

Construct an interim 2-lane section of Singleton Road between the realigned Roberts Road and the I-10 eastbound ramps intersection.

For Phase 1, the new westerly half of the existing I-10 interchange at Singleton Road shall be implemented, which includes (1) the eastbound off ramp from I-10 to Singleton Road, (2) the westbound on ramp to I-10 from Singleton Road, and (3) realignment of Calimesa Boulevard to move the Calimesa Boulevard / Singleton Road intersection further east of the I-10 westbound ramps intersection on Singleton Road

For I-10 Eastbound Ramps & Singleton Road (intersection 2), provide one shared southbound left-through lane and one southbound right turn lane.

Roberts Road at Singleton Road (intersection 5) shall be realigned and initially provided with north/south cross-street stop control. For the northbound and eastbound intersection entries, one approach lane is needed initially. For the westbound intersection entry, 1 westbound left turn lane and 1 shared westbound through-right turn lane shall be provided.

For TC-3 Driveway at Singleton Road (intersection 7), provide northbound cross-street stop control. Provide one eastbound through lane, one westbound left turn lane, and one westbound through lane.

Eastbound cross-street stop control shall be provided for Roberts Road at TC-3 Driveway (intersection 11). Provide one northbound lane and one southbound lane on Roberts Road.

EXHIBIT 29: PHASE 4 (2030) CUMULATIVE IMPROVEMENTS

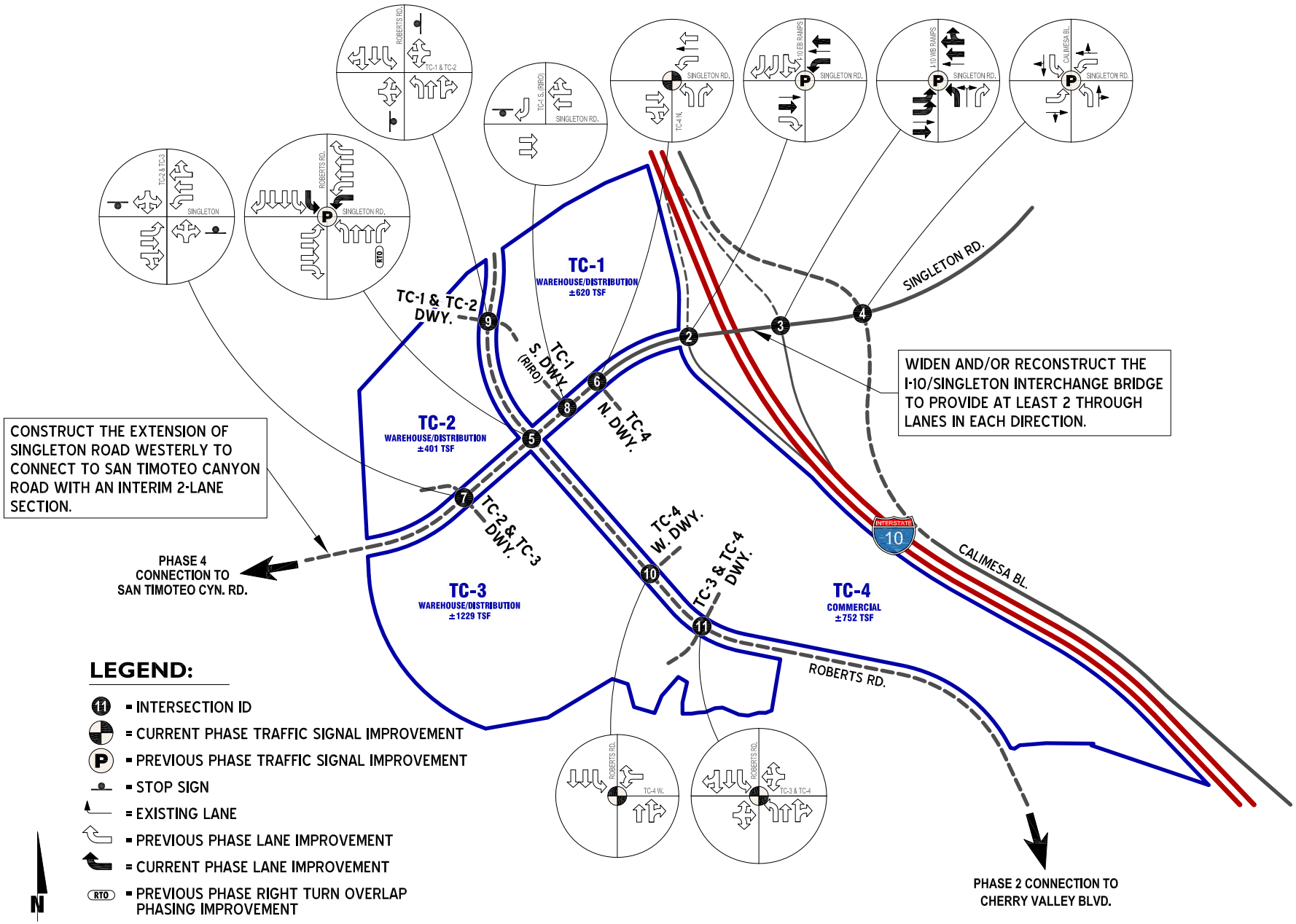


TABLE 13: OAK VALLEY TOWN CENTER INTERSECTION ANALYSIS FOR PHASE 4 (2030) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (Secs)		Level of Service[2]		Delay[2] (Secs)		Level of Service[2]	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
2	I-10 EB Ramps / Singleton Rd.																					
	- With Ramp Improvements	CSS	0	0	0	**0.5**	**0.5**	**1**	0	1	0	0.5	0.5	0	**>80**	**>80**	**F**	**F**	**>80**	**>80**	**F**	**F**
	- With Additional Improvements	**TS**	0	0	0	**0.5**	**0.5**	**2**	0	**2**	**1**	**1**	**2**	0	15.5	14.3	B	B	16.8	39.4	B	D
3	I-10 WB Ramps / Singleton Rd.	CSS																				
	- With Ramp Improvements	CSS	0.5	0.5	1	0	0	0	0.5	0.5	0	0	1	0	**>80**	**>80**	**F**	**F**	**>80**	**>80**	**F**	**F**
	- With Additional Improvements	**TS**	**1**	1!	1	0	0	0	**2**	**2**	0	0	**2**	0	13.8	15.4	B	B	19.6	38.0	B	D
4	Calimesa Bl. / Singleton Rd.																					
	- Without Improvements	AWS	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	0.5	0.5	d	**>80**	**>80**	**F**	**F**	**>80**	**>80**	**F**	**F**
	- With Improvements	**TS**	**1**	1	0	**1**	1	0	**1**	1	0	**1**	1	0	30.3	29.1	C	C	30.5	27.9	C	C
5	Roberts Rd. / Singleton Rd.																					
	- With Existing Roberts Rd.	CSS	0	1	0	0	1	0	0	0	0	0	1!	0	**>80**	**>80**	**F**	**F**	-	-	-	-
	- With Realigned Roberts Rd.	**TS**	**1**	**2**	**1>**	**2**	**2**	**1**	**1**	**2**	**1**	**2**	**2**	**1**	36.1	31.5	D	C	42.1	54.3	D	D
6	TC-4 N. Dwy. / Singleton Rd.	**TS**	**1**	0	**1**	0	0	0	0	**2**	0	**1**	**2**	0	-	-	-	-	12.4	37.9	B	D
7	TC-2 & TC-3 Dwy. / Singleton Rd.	**CSS**	0	**1!**	0	0	**1!**	0	**1**	**2**	0	**1**	**2**	0	-	-	-	-	25.8	33.5	D	D
8	TC-1 S. Dwy. / Singleton Rd.	**CSS**	0	0	0	0	0	**1**	0	**2**	0	0	**2**	0	-	-	-	-	15.4	30.3	C	D
9	Roberts Rd. / TC-1 & TC-2 Dwy.	**CSS**	**1**	**2**	0	**1**	**2**	0	0	**1!**	0	0	**1!**	0	-	-	-	-	34.0	32.3	D	D
10	Roberts Rd. / TC-4 W. Dwy.	**TS**	0	**2**	0	**1**	**2**	0	0	**1!**	0	0	0	0	-	-	-	-	10.1	37.5	B	D
11	Roberts Rd. / TC-3 Dwy.	**TS**	**1**	**2**	0	**1**	**2**	0	0	**1!**	0	0	**1**	0	-	-	-	-	12.3	29.2	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto Righ Turn Lane; 0.5 = Shared turn lane; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual (HCM), overall average intersection delay and level of service (LOS) are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[3] TS = Traffic Signal; CSS = Cross-Street Stop; AWS = All-Way Stop

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For Project Phase 2 (2024) conditions, the following additional improvements are recommended:

Singleton Road shall be constructed at its ultimate half-section (interim 2-lane section) along the Project Phase 2 frontage east of Roberts Road.

Ultimate Singleton Road improvements shall be completed from the western Project Phase 2 boundary to Roberts Road.

Ultimate Roberts Road improvements shall be constructed north of Singleton Road along the Project Phase 2 frontage.

The extension of Roberts Road south to the existing Roberts Road segment which allows connection with Cherry Valley Boulevard shall be provided in conjunction with Phase 2.

For I-10 Eastbound Ramps at Singleton Road (intersection 2), construct interim traffic signal improvements.

For I-10 Westbound Ramps at Singleton Road (intersection 3), construct interim traffic signal improvements.

For Calimesa Boulevard at Singleton Road (intersection 4), construct interim traffic signal improvements.

For Roberts Road at Singleton Road (intersection 5), construct interim traffic signal improvements and provide at least the following lanes (interim design subject to City determination):

Northbound – 1 left turn lane, 1 through lane, and 1 right turn lane

Southbound – 1 left turn lane, 2 through lanes, and 1 right turn lane

Eastbound – 1 left turn lane, 1 through lane, and 1 right turn lane

Westbound – 1 left turn lane, 1 through lane, and 1 right turn lane

For the TC-2/TC-3 Driveway at Singleton Road (intersection 7), construct north leg to include cross-street stop control. Provide one eastbound left turn lane, a second eastbound through lane, and a second westbound through lane in conjunction with the ultimate Singleton Road improvements along the TC-2/TC-3 frontage.

For the TC-1 South Driveway at Singleton Road (intersection 8), provide a right-in/right-out only access with cross-street stop control

For Roberts Road at the TC-2/TC-1 Driveway (intersection 9), provide east/west cross-street stop control.

For Project Phase 3 (2026) conditions, the following additional improvements are recommended:

Ultimate Singleton Road improvements shall be completed along the Project Phase 3 frontage east of Roberts Road.

Ultimate Roberts Road improvements shall be completed south of Singleton Road along the Project Phase 3 frontage.

For the I-10 Eastbound off-ramp at Singleton Road (intersection 2), provide an additional southbound right turn lane and an eastbound right turn lane on Singleton Road.

For Roberts Road at Singleton Road (intersection 5), provide at least one additional through lane on the northbound, eastbound, and westbound approaches in conjunction with ultimate cross section improvements (interim lane striping subject to City determination):

For the TC-4 Driveway at Singleton Road (intersection 6), construct south leg with cross-street stop control for interim conditions.

For Roberts Road at the TC-4 Driveway (intersection 10) and at the TC-3/TC-4 Driveway (intersection 11), provide interim cross-street stop controls.

For Project Phase 4 (2030) conditions, the following additional improvements are recommended:

Construct the extension of Singleton Road westerly to connect to San Timoteo Canyon Road with an interim 2-lane section.

Widen and/or reconstruct the I-10/Singleton interchange bridge to provide at least 2 through lanes in each direction, with dual eastbound left turn lanes approaching the I-10 westbound on-ramp (intersection 3).

For the I-10 Westbound off-ramp at Singleton Road (intersection 3), provide an additional northbound left turn lane.

For Roberts Road at Singleton Road (intersection 5), provide an additional southbound left turn lane and an additional westbound left turn lane (if not already accommodated in Project Phase 3).

For Calimesa Boulevard at Singleton Road (intersection 4), provide one separate left turn lane on each of the northbound, southbound, eastbound and westbound approaches and modify the traffic signal implemented in Phase 2 (if not already accommodated in Project Phase 2).

For the TC-4 Driveway at Singleton Road (intersection 6), construct traffic signal improvements (if not already accommodated in Project Phase 3).

For Roberts Road at the TC-4 Driveway (intersection 10), construct traffic signal improvements (if not already accommodated in Project Phase 3).

For Roberts Road at the TC-3/TC-4 Driveway (intersection 11), construct traffic signal improvements (if not already accommodated in Project Phase 3).

CONCLUSION

This traffic evaluation documents trip generation, cumulative traffic forecasts and recommended intersection configurations for Project Phase 1 (2022), Project Phase 2 (2024), Project Phase 3 (2026), and Project Buildout (Phase 4, 2030) of the Oak Valley Town Center. For each phase, refinements to raw trip generation estimates have been made to provide a more detailed breakdown of trips by vehicle mix. Truck trips are converted to passenger-car-equivalent (PCE) trips for the warehousing/distribution buildings associated with each phase of the Project.

Cumulative future network connections and lane improvements are identified for each project development phase in order to maintain acceptable traffic service levels in the study area. Project driveway access provisions for each planning area have been addressed; however, detailed assessments of site access features will be needed with the processing of site plans. If you have any questions, please contact John Kain at (949) 336-5990 or Marlie Whiteman (949) 336-5991.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain, AICP
Principal

Marlie Whiteman, PE
Senior Associate

Attachments

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ATTACHMENT 1:

PHASE 1 (2022) WITHOUT AND WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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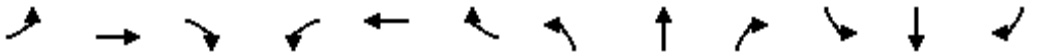


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	23	1	127	17	0	0	0	0	19	1	1
Future Volume (vph)	0	23	1	127	17	0	0	0	0	19	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	23	1	127	17	0	0	0	0	19	1	1
Future Vol, veh/h	0	23	1	127	17	0	0	0	0	19	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	25	1	138	18	0	0	0	0	21	1	1

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	26	0	0			320	320	18
Stage 1	-	-	-	-	-	-			294	294	-
Stage 2	-	-	-	-	-	-			26	26	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1588	-	0			673	597	1061
Stage 1	0	-	-	-	-	0			756	670	-
Stage 2	0	-	-	-	-	0			997	874	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1588	-	-			614	0	1061
Mov Cap-2 Maneuver	-	-	-	-	-	-			614	0	-
Stage 1	-	-	-	-	-	-			756	0	-
Stage 2	-	-	-	-	-	-			909	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.6	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1588	-	614	1061
HCM Lane V/C Ratio	-	-	0.087	-	0.035	0.001
HCM Control Delay (s)	-	-	7.5	0	11.1	8.4
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0.1	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	41	0	0	141	139	3	1	116	0	0	0
Future Volume (vph)	1	41	0	0	141	139	3	1	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

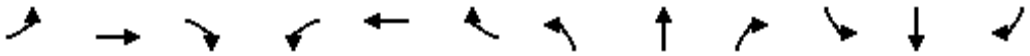
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	41	0	0	141	139	3	1	116	0	0	0
Future Vol, veh/h	1	41	0	0	141	139	3	1	116	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	45	0	0	153	151	3	1	126	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	304	0	-	-	-	0	276	351	45
Stage 1	-	-	-	-	-	-	47	47	-
Stage 2	-	-	-	-	-	-	229	304	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1257	-	0	0	-	-	714	573	1025
Stage 1	-	-	0	0	-	-	975	856	-
Stage 2	-	-	0	0	-	-	809	663	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1257	-	-	-	-	-	713	0	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	713	0	-
Stage 1	-	-	-	-	-	-	974	0	-
Stage 2	-	-	-	-	-	-	809	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	713	1025	1257	-	-	-
HCM Lane V/C Ratio	0.006	0.123	0.001	-	-	-
HCM Control Delay (s)	10.1	9	7.9	0	-	-
HCM Lane LOS	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	0.4	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	61	6	14	230	46	6	409	29	31	17	44
Future Volume (vph)	90	61	6	14	230	46	6	409	29	31	17	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

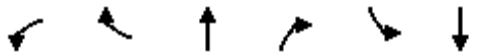
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	61	6	14	230	46	6	409	29	31	17	44
Future Vol, veh/h	90	61	6	14	230	46	6	409	29	31	17	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	64	6	15	242	48	6	431	31	33	18	46
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	13.1	14.3	24.7	10.2
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	60%	0%	6%	0%	65%	0%
Vol Thru, %	99%	0%	40%	0%	94%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	415	29	151	6	244	46	48	44
LT Vol	6	0	90	0	14	0	31	0
Through Vol	409	0	61	0	230	0	17	0
RT Vol	0	29	0	6	0	46	0	44
Lane Flow Rate	437	31	159	6	257	48	51	46
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.755	0.047	0.316	0.011	0.474	0.079	0.103	0.079
Departure Headway (Hd)	6.22	5.503	7.16	6.141	6.643	5.902	7.323	6.176
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	581	647	499	577	539	602	492	574
Service Time	3.987	3.27	4.954	3.935	4.425	3.684	5.023	3.976
HCM Lane V/C Ratio	0.752	0.048	0.319	0.01	0.477	0.08	0.104	0.08
HCM Control Delay	25.8	8.5	13.3	9	15.3	9.2	10.9	9.5
HCM Lane LOS	D	A	B	A	C	A	B	A
HCM 95th-tile Q	6.7	0.1	1.3	0	2.5	0.3	0.3	0.3



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	1	1	26	1	1
Future Volume (vph)	67	1	1	26	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

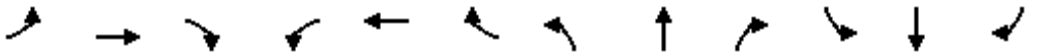
Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	1	1	26	1	1
Future Vol, veh/h	67	1	1	26	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	1	1	28	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	18	15	0	0	29	0
Stage 1	15	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1000	1065	-	-	1584	-
Stage 1	1008	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	999	1065	-	-	1584	-
Mov Cap-2 Maneuver	999	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1584	-
HCM Lane V/C Ratio	-	-	0.074	0.001	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	25	3	85	68	0	0	0	0	43	1	1
Future Volume (vph)	0	25	3	85	68	0	0	0	0	43	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

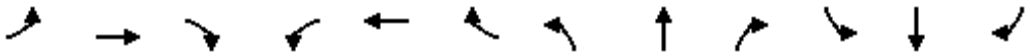
Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	25	3	85	68	0	0	0	0	43	1	1
Future Vol, veh/h	0	25	3	85	68	0	0	0	0	43	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	3	92	74	0	0	0	0	47	1	1

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	30	0	0			287	288	74
Stage 1	-	-	-	-	-	-			258	258	-
Stage 2	-	-	-	-	-	-			29	30	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1583	-	0			703	622	988
Stage 1	0	-	-	-	-	0			785	694	-
Stage 2	0	-	-	-	-	0			994	870	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1583	-	-			660	0	988
Mov Cap-2 Maneuver	-	-	-	-	-	-			660	0	-
Stage 1	-	-	-	-	-	-			785	0	-
Stage 2	-	-	-	-	-	-			933	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.1	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1583	-	660	988
HCM Lane V/C Ratio	-	-	0.058	-	0.072	0.001
HCM Control Delay (s)	-	-	7.4	0	10.9	8.6
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.2	-	0.2	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	67	0	0	150	133	3	1	124	0	0	0
Future Volume (vph)	1	67	0	0	150	133	3	1	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

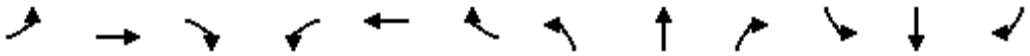
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	67	0	0	150	133	3	1	124	0	0	0
Future Vol, veh/h	1	67	0	0	150	133	3	1	124	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	73	0	0	163	145	3	1	135	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	308	0	-	-	-	0	311	383	73
Stage 1	-	-	-	-	-	-	75	75	-
Stage 2	-	-	-	-	-	-	236	308	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1253	-	0	0	-	-	681	550	989
Stage 1	-	-	0	0	-	-	948	833	-
Stage 2	-	-	0	0	-	-	803	660	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1253	-	-	-	-	-	680	0	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	680	0	-
Stage 1	-	-	-	-	-	-	947	0	-
Stage 2	-	-	-	-	-	-	803	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	680	989	1253	-	-	-
HCM Lane V/C Ratio	0.006	0.136	0.001	-	-	-
HCM Control Delay (s)	10.3	9.2	7.9	0	-	-
HCM Lane LOS	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	0.5	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	72	7	17	245	18	2	92	33	122	68	36
Future Volume (vph)	112	72	7	17	245	18	2	92	33	122	68	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	72	7	17	245	18	2	92	33	122	68	36
Future Vol, veh/h	112	72	7	17	245	18	2	92	33	122	68	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	73	7	17	250	18	2	94	34	124	69	37
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.1	13.2	10.1	12.1
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	61%	0%	6%	0%	64%	0%
Vol Thru, %	98%	0%	39%	0%	94%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	94	33	184	7	262	18	190	36
LT Vol	2	0	112	0	17	0	122	0
Through Vol	92	0	72	0	245	0	68	0
RT Vol	0	33	0	7	0	18	0	36
Lane Flow Rate	96	34	188	7	267	18	194	37
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.171	0.053	0.333	0.011	0.445	0.027	0.351	0.056
Departure Headway (Hd)	6.403	5.681	6.385	5.367	5.989	5.248	6.52	5.485
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	559	628	563	665	602	681	551	651
Service Time	4.157	3.435	4.132	3.114	3.732	2.991	4.267	3.231
HCM Lane V/C Ratio	0.172	0.054	0.334	0.011	0.444	0.026	0.352	0.057
HCM Control Delay	10.5	8.8	12.3	8.2	13.5	8.1	12.8	8.6
HCM Lane LOS	B	A	B	A	B	A	B	A
HCM 95th-tile Q	0.6	0.2	1.5	0	2.3	0.1	1.6	0.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	1	1	22	1	1
Future Volume (vph)	15	1	1	22	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

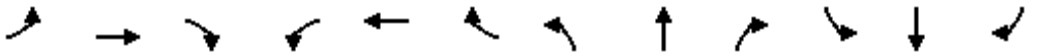
Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	1	1	22	1	1
Future Vol, veh/h	15	1	1	22	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	1	1	24	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	16	13	0	0	25	0
Stage 1	13	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1002	1067	-	-	1589	-
Stage 1	1010	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1001	1067	-	-	1589	-
Mov Cap-2 Maneuver	1001	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1005	1589	-
HCM Lane V/C Ratio	-	-	0.017	0.001	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	50	19	127	99	0	0	0	0	19	1	68
Future Volume (vph)	0	50	19	127	99	0	0	0	0	19	1	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

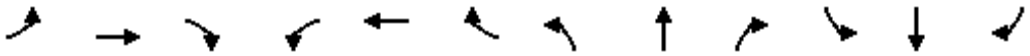
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	50	19	127	99	0	0	0	0	19	1	68
Future Vol, veh/h	0	50	19	127	99	0	0	0	0	19	1	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	54	21	138	108	0	0	0	0	21	1	74

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	75	0	0			449	459	108
Stage 1	-	-	-	-	-	-			384	384	-
Stage 2	-	-	-	-	-	-			65	75	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1524	-	0			568	499	946
Stage 1	0	-	-	-	-	0			688	611	-
Stage 2	0	-	-	-	-	0			958	833	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1524	-	-			513	0	946
Mov Cap-2 Maneuver	-	-	-	-	-	-			513	0	-
Stage 1	-	-	-	-	-	-			688	0	-
Stage 2	-	-	-	-	-	-			866	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	4.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1524	-	513	946
HCM Lane V/C Ratio	-	-	0.091	-	0.042	0.078
HCM Control Delay (s)	-	-	7.6	0	12.3	9.1
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0.1	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	48	0	0	163	139	63	1	116	0	0	0
Future Volume (vph)	21	48	0	0	163	139	63	1	116	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

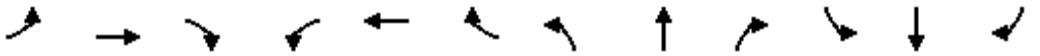
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	48	0	0	163	139	63	1	116	0	0	0
Future Vol, veh/h	21	48	0	0	163	139	63	1	116	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	52	0	0	177	151	68	1	126	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	328	0	-	-	-	0	351	426	52
Stage 1	-	-	-	-	-	-	98	98	-
Stage 2	-	-	-	-	-	-	253	328	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1232	-	0	0	-	-	646	520	1016
Stage 1	-	-	0	0	-	-	926	814	-
Stage 2	-	-	0	0	-	-	789	647	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1232	-	-	-	-	-	634	0	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	634	0	-
Stage 1	-	-	-	-	-	-	908	0	-
Stage 2	-	-	-	-	-	-	789	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.4	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	634	1016	1232	-	-	-
HCM Lane V/C Ratio	0.11	0.124	0.019	-	-	-
HCM Control Delay (s)	11.4	9	8	0	-	-
HCM Lane LOS	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0.4	0.1	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	63	8	14	237	46	13	409	29	31	17	51
Future Volume (vph)	92	63	8	14	237	46	13	409	29	31	17	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	63	8	14	237	46	13	409	29	31	17	51
Future Vol, veh/h	92	63	8	14	237	46	13	409	29	31	17	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	66	8	15	249	48	14	431	31	33	18	54
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	13.5	15	26.6	10.4
HCM LOS	B	B	D	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	3%	0%	59%	0%	6%	0%	65%	0%
Vol Thru, %	97%	0%	41%	0%	94%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	422	29	155	8	251	46	48	51
LT Vol	13	0	92	0	14	0	31	0
Through Vol	409	0	63	0	237	0	17	0
RT Vol	0	29	0	8	0	46	0	51
Lane Flow Rate	444	31	163	8	264	48	51	54
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.777	0.047	0.333	0.015	0.493	0.08	0.104	0.095
Departure Headway (Hd)	6.301	5.575	7.347	6.333	6.722	5.981	7.424	6.376
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	569	637	493	569	531	593	485	564
Service Time	4.083	3.357	5.052	4.033	4.52	3.779	5.135	4.087
HCM Lane V/C Ratio	0.78	0.049	0.331	0.014	0.497	0.081	0.105	0.096
HCM Control Delay	27.8	8.6	13.7	9.1	16	9.3	11	9.8
HCM Lane LOS	D	A	B	A	C	A	B	A
HCM 95th-tile Q	7.2	0.1	1.4	0	2.7	0.3	0.3	0.3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	27	1	75	89	1	40
Future Volume (vph)	27	1	75	89	1	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		150	0
Storage Lanes		0	1		0	0
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	600			357	1236	
Travel Time (s)	13.6			8.1	28.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	1	75	89	1	40
Future Vol, veh/h	27	1	75	89	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	1	82	97	1	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	30	0	291	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1583	-	700	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	783	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1583	-	664	1044
Mov Cap-2 Maneuver	-	-	-	-	664	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	742	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1030	-	-	1583	-
HCM Lane V/C Ratio	0.043	-	-	0.051	-
HCM Control Delay (s)	8.7	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1	1	89	1	1	27
Future Volume (vph)	1	1	89	1	1	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	808			600	329	
Travel Time (s)	18.4			13.6	7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

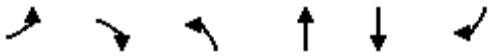
Intersection	
Int Delay, s/veh	7.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	1	89	1	1	27
Future Vol, veh/h	1	1	89	1	1	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	97	1	1	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	197	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1620	-	792	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	744	1082
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1065	-	-	1620	-
HCM Lane V/C Ratio	0.029	-	-	0.06	-
HCM Control Delay (s)	8.5	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	1	1	24	17	60
Future Volume (vph)	18	1	1	24	17	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	0			0
Taper Length (ft)	90		90			
Link Speed (mph)	30			30	30	
Link Distance (ft)	312			1103	522	
Travel Time (s)	7.1			25.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

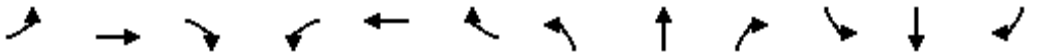
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	1	1	24	17	60
Future Vol, veh/h	18	1	1	24	17	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1	1	26	18	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	79	51	83	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	924	1017	1514	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1017	1514	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	995	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1514	-	928	-	-
HCM Lane V/C Ratio	0.001	-	0.022	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	105	57	85	99	0	0	0	0	43	1	26
Future Volume (vph)	0	105	57	85	99	0	0	0	0	43	1	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

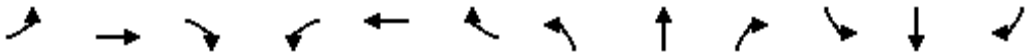
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	105	57	85	99	0	0	0	0	43	1	26
Future Vol, veh/h	0	105	57	85	99	0	0	0	0	43	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	114	62	92	108	0	0	0	0	47	1	28

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	176	0	0			437	468	108
Stage 1	-	-	-	-	-	-			292	292	-
Stage 2	-	-	-	-	-	-			145	176	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1400	-	0			577	493	946
Stage 1	0	-	-	-	-	0			758	671	-
Stage 2	0	-	-	-	-	0			882	753	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1400	-	-			537	0	946
Mov Cap-2 Maneuver	-	-	-	-	-	-			537	0	-
Stage 1	-	-	-	-	-	-			758	0	-
Stage 2	-	-	-	-	-	-			820	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.6	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1400	-	537	946
HCM Lane V/C Ratio	-	-	0.066	-	0.089	0.03
HCM Control Delay (s)	-	-	7.8	0	12.4	8.9
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.2	-	0.3	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	87	0	0	158	133	25	1	124	0	0	0
Future Volume (vph)	61	87	0	0	158	133	25	1	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

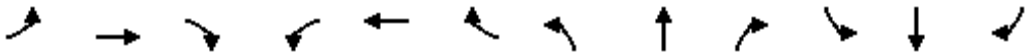
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	87	0	0	158	133	25	1	124	0	0	0
Future Vol, veh/h	61	87	0	0	158	133	25	1	124	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	95	0	0	172	145	27	1	135	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	317	0	-	-	-	0	472	544	95
Stage 1	-	-	-	-	-	-	227	227	-
Stage 2	-	-	-	-	-	-	245	317	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1243	-	0	0	-	-	551	446	962
Stage 1	-	-	0	0	-	-	811	716	-
Stage 2	-	-	0	0	-	-	796	654	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1243	-	-	-	-	-	520	0	962
Mov Cap-2 Maneuver	-	-	-	-	-	-	520	0	-
Stage 1	-	-	-	-	-	-	766	0	-
Stage 2	-	-	-	-	-	-	796	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.3	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	520	962	1243	-	-	-
HCM Lane V/C Ratio	0.054	0.14	0.053	-	-	-
HCM Control Delay (s)	12.3	9.4	8.1	0	-	-
HCM Lane LOS	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	0.5	0.2	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	79	14	17	248	18	5	92	33	122	68	39
Future Volume (vph)	119	79	14	17	248	18	5	92	33	122	68	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	119	79	14	17	248	18	5	92	33	122	68	39
Future Vol, veh/h	119	79	14	17	248	18	5	92	33	122	68	39
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	81	14	17	253	18	5	94	34	124	69	40
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.5	13.4	10.2	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	60%	0%	6%	0%	64%	0%
Vol Thru, %	95%	0%	40%	0%	94%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	33	198	14	265	18	190	39
LT Vol	5	0	119	0	17	0	122	0
Through Vol	92	0	79	0	248	0	68	0
RT Vol	0	33	0	14	0	18	0	39
Lane Flow Rate	99	34	202	14	270	18	194	40
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.179	0.054	0.36	0.021	0.455	0.027	0.356	0.062
Departure Headway (Hd)	6.514	5.776	6.423	5.409	6.057	5.315	6.609	5.573
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	549	618	560	660	595	672	543	641
Service Time	4.27	3.531	4.175	3.16	3.803	3.062	4.357	3.321
HCM Lane V/C Ratio	0.18	0.055	0.361	0.021	0.454	0.027	0.357	0.062
HCM Control Delay	10.7	8.9	12.8	8.3	13.8	8.2	13	8.7
HCM Lane LOS	B	A	B	A	B	A	B	A
HCM 95th-tile Q	0.6	0.2	1.6	0.1	2.4	0.1	1.6	0.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	80	1	89	34	1	80
Future Volume (vph)	80	1	89	34	1	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		150	0
Storage Lanes		0	1		0	0
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	600			357	1236	
Travel Time (s)	13.6			8.1	28.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	80	1	89	34	1	80
Future Vol, veh/h	80	1	89	34	1	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	1	97	37	1	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	88	0	319	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1508	-	674	970
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1508	-	631	970
Mov Cap-2 Maneuver	-	-	-	-	631	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.5	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1508	-
HCM Lane V/C Ratio	0.091	-	-	0.064	-
HCM Control Delay (s)	9.1	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1	1	34	1	1	80
Future Volume (vph)	1	1	34	1	1	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	808			600	329	
Travel Time (s)	18.4			13.6	7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

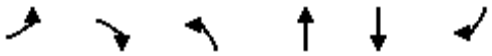
Intersection	
Int Delay, s/veh	8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	1	34	1	1	80
Future Vol, veh/h	1	1	34	1	1	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	37	1	1	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	77	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1620	-	926	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	905	1082
Mov Cap-2 Maneuver	-	-	-	-	905	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.1	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1079	-	-	1620	-
HCM Lane V/C Ratio	0.082	-	-	0.023	-
HCM Control Delay (s)	8.6	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	54	1	1	28	68	22
Future Volume (vph)	54	1	1	28	68	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	0			0
Taper Length (ft)	90		90			
Link Speed (mph)	30			30	30	
Link Distance (ft)	312			1103	522	
Travel Time (s)	7.1			25.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	1	1	28	68	22
Future Vol, veh/h	54	1	1	28	68	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	1	1	30	74	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	118	86	98	0	-	0
Stage 1	86	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	878	973	1495	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	973	1495	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1495	-	879	-	-
HCM Lane V/C Ratio	0.001	-	0.068	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

ATTACHMENT 2:

PHASE 2 (2024) WITHOUT AND WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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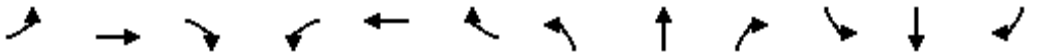


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	187	1	160	210	0	0	0	0	29	1	1
Future Volume (vph)	0	187	1	160	210	0	0	0	0	29	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	187	1	160	210	0	0	0	0	29	1	1
Future Vol, veh/h	0	187	1	160	210	0	0	0	0	29	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	203	1	174	228	0	0	0	0	32	1	1

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	204	0	0			780	780	228
Stage 1	-	-	-	-	-	-			576	576	-
Stage 2	-	-	-	-	-	-			204	204	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1368	-	0			364	327	811
Stage 1	0	-	-	-	-	0			562	502	-
Stage 2	0	-	-	-	-	0			830	733	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1368	-	-			311	0	811
Mov Cap-2 Maneuver	-	-	-	-	-	-			311	0	-
Stage 1	-	-	-	-	-	-			562	0	-
Stage 2	-	-	-	-	-	-			709	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.5	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1368	-	311	811
HCM Lane V/C Ratio	-	-	0.127	-	0.105	0.001
HCM Control Delay (s)	-	-	8	0	17.9	9.4
HCM Lane LOS	-	-	A	A	C	A
HCM 95th %tile Q(veh)	-	-	0.4	-	0.3	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	215	0	0	367	175	3	1	125	0	0	0
Future Volume (vph)	1	215	0	0	367	175	3	1	125	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

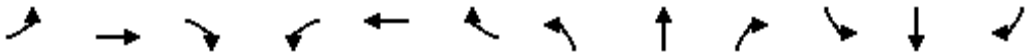
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	215	0	0	367	175	3	1	125	0	0	0
Future Vol, veh/h	1	215	0	0	367	175	3	1	125	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	234	0	0	399	190	3	1	136	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	589	0	-	-	-	0	730	825	234
Stage 1	-	-	-	-	-	-	236	236	-
Stage 2	-	-	-	-	-	-	494	589	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	986	-	0	0	-	-	389	308	805
Stage 1	-	-	0	0	-	-	803	710	-
Stage 2	-	-	0	0	-	-	613	495	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	986	-	-	-	-	-	389	0	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	0	-
Stage 1	-	-	-	-	-	-	802	0	-
Stage 2	-	-	-	-	-	-	613	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	389	805	986	-	-	-
HCM Lane V/C Ratio	0.011	0.169	0.001	-	-	-
HCM Control Delay (s)	14.4	10.4	8.7	0	-	-
HCM Lane LOS	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	0.6	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	169	12	16	421	58	7	431	32	39	21	114
Future Volume (vph)	159	169	12	16	421	58	7	431	32	39	21	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	64.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	159	169	12	16	421	58	7	431	32	39	21	114
Future Vol, veh/h	159	169	12	16	421	58	7	431	32	39	21	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	167	178	13	17	443	61	7	454	34	41	22	120
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

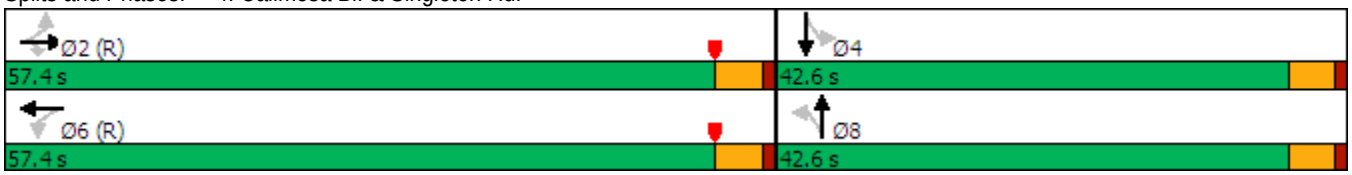
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	42.4	78.7	83.1	15.3
HCM LOS	E	F	F	C

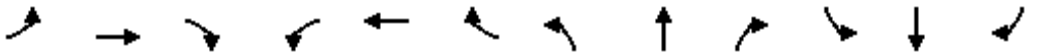
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	48%	0%	4%	0%	65%	0%
Vol Thru, %	98%	0%	52%	0%	96%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	438	32	328	12	437	58	60	114
LT Vol	7	0	159	0	16	0	39	0
Through Vol	431	0	169	0	421	0	21	0
RT Vol	0	32	0	12	0	58	0	114
Lane Flow Rate	461	34	345	13	460	61	63	120
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.055	0.07	0.83	0.027	1.052	0.128	0.17	0.289
Departure Headway (Hd)	8.514	7.779	9.156	8.172	8.552	7.805	10.176	9.096
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	429	463	397	441	428	462	355	397
Service Time	6.214	5.479	6.856	5.872	6.252	5.505	7.876	6.796
HCM Lane V/C Ratio	1.075	0.073	0.869	0.029	1.075	0.132	0.177	0.302
HCM Control Delay	88.4	11.1	43.5	11.1	87.6	11.6	14.9	15.5
HCM Lane LOS	F	B	E	B	F	B	B	C
HCM 95th-tile Q	14.5	0.2	7.6	0.1	14.3	0.4	0.6	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	169	12	16	421	58	7	431	32	39	21	114
Future Volume (vph)	159	169	12	16	421	58	7	431	32	39	21	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.4	57.4	57.4	57.4	57.4		42.6	42.6		42.6	42.6	
Total Split (%)	57.4%	57.4%	57.4%	57.4%	57.4%		42.6%	42.6%		42.6%	42.6%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	169	12	16	421	58	7	431	32	39	21	114
Future Volume (veh/h)	159	169	12	16	421	58	7	431	32	39	21	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	178	13	17	443	61	7	454	34	41	22	120
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	372	943	53	939	127	383	542	41	135	79	432
Arrive On Green	0.99	0.99	0.99	0.59	0.59	0.59	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	524	626	1585	26	1578	213	1246	1718	129	908	252	1372
Grp Volume(v), veh/h	345	0	13	521	0	0	7	0	488	41	0	142
Grp Sat Flow(s),veh/h/ln	1150	0	1585	1817	0	0	1246	0	1847	908	0	1623
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	24.6	4.4	0.0	6.6
Cycle Q Clear(g_c), s	0.2	0.0	0.0	16.1	0.0	0.0	7.0	0.0	24.6	29.0	0.0	6.6
Prop In Lane	0.48		1.00	0.03		0.12	1.00		0.07	1.00		0.85
Lane Grp Cap(c), veh/h	738	0	943	1118	0	0	383	0	582	135	0	512
V/C Ratio(X)	0.47	0.00	0.01	0.47	0.00	0.00	0.02	0.00	0.84	0.30	0.00	0.28
Avail Cap(c_a), veh/h	738	0	943	1118	0	0	465	0	704	195	0	619
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.00	0.97	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.1	0.0	0.1	11.5	0.0	0.0	28.3	0.0	31.9	45.4	0.0	25.7
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.4	0.0	0.0	0.0	0.0	7.5	1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	6.5	0.0	0.0	0.1	0.0	11.9	1.0	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	0.0	0.2	12.9	0.0	0.0	28.3	0.0	39.4	46.6	0.0	26.0
LnGrp LOS	A	A	A	B	A	A	C	A	D	D	A	C
Approach Vol, veh/h		358			521			495			183	
Approach Delay, s/veh		2.1			12.9			39.3			30.6	
Approach LOS		A			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		64.0		36.0		64.0		36.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		52.9		38.1		52.9		38.1				
Max Q Clear Time (g_c+I1), s		2.2		31.0		18.1		26.6				
Green Ext Time (p_c), s		3.1		0.5		3.9		2.4				

Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	209	1	1	186	1	1
Future Volume (vph)	209	1	1	186	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

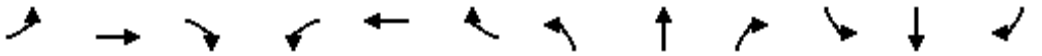
Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	209	1	1	186	1	1
Future Vol, veh/h	209	1	1	186	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	227	1	1	202	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	105	102	0	0	203	0
Stage 1	102	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	893	953	-	-	1369	-
Stage 1	922	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	892	953	-	-	1369	-
Mov Cap-2 Maneuver	892	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	3.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	892	1369	-
HCM Lane V/C Ratio	-	-	0.256	0.001	-
HCM Control Delay (s)	-	-	10.4	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	163	4	121	260	0	0	0	0	54	1	1
Future Volume (vph)	0	163	4	121	260	0	0	0	0	54	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	163	4	121	260	0	0	0	0	54	1	1
Future Vol, veh/h	0	163	4	121	260	0	0	0	0	54	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	177	4	132	283	0	0	0	0	59	1	1

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	181	0	0			726	728	283
Stage 1	-	-	-	-	-	-			547	547	-
Stage 2	-	-	-	-	-	-			179	181	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1394	-	0			391	350	756
Stage 1	0	-	-	-	-	0			580	517	-
Stage 2	0	-	-	-	-	0			852	750	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1394	-	-			347	0	756
Mov Cap-2 Maneuver	-	-	-	-	-	-			347	0	-
Stage 1	-	-	-	-	-	-			580	0	-
Stage 2	-	-	-	-	-	-			757	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1394	-	347	756
HCM Lane V/C Ratio	-	-	0.094	-	0.172	0.001
HCM Control Delay (s)	-	-	7.9	0	17.5	9.8
HCM Lane LOS	-	-	A	A	C	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0.6	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	216	0	0	378	167	3	1	140	0	0	0
Future Volume (vph)	1	216	0	0	378	167	3	1	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

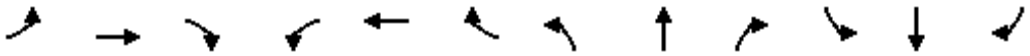
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	216	0	0	378	167	3	1	140	0	0	0
Future Vol, veh/h	1	216	0	0	378	167	3	1	140	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	235	0	0	411	182	3	1	152	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	593	0	-	-	-	0	739	830	235
Stage 1	-	-	-	-	-	-	237	237	-
Stage 2	-	-	-	-	-	-	502	593	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	983	-	0	0	-	-	385	306	804
Stage 1	-	-	0	0	-	-	802	709	-
Stage 2	-	-	0	0	-	-	608	493	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	983	-	-	-	-	-	385	0	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	0	-
Stage 1	-	-	-	-	-	-	801	0	-
Stage 2	-	-	-	-	-	-	608	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	385	804	983	-	-	-
HCM Lane V/C Ratio	0.011	0.189	0.001	-	-	-
HCM Control Delay (s)	14.5	10.5	8.7	0	-	-
HCM Lane LOS	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	0.7	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	161	17	18	432	22	2	97	39	154	86	111
Future Volume (vph)	178	161	17	18	432	22	2	97	39	154	86	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	31.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	161	17	18	432	22	2	97	39	154	86	111
Future Vol, veh/h	178	161	17	18	432	22	2	97	39	154	86	111
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	182	164	17	18	441	22	2	99	40	157	88	113
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	28.5	48.1	13.2	18
HCM LOS	D	E	B	C

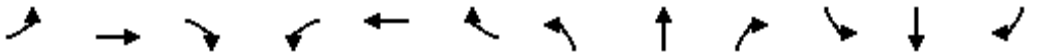
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	53%	0%	4%	0%	64%	0%
Vol Thru, %	98%	0%	47%	0%	96%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	39	339	17	450	22	240	111
LT Vol	2	0	178	0	18	0	154	0
Through Vol	97	0	161	0	432	0	86	0
RT Vol	0	39	0	17	0	22	0	111
Lane Flow Rate	101	40	346	17	459	22	245	113
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.242	0.087	0.739	0.032	0.921	0.04	0.556	0.224
Departure Headway (Hd)	8.611	7.873	7.686	6.697	7.221	6.483	8.167	7.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	458	467	531	501	549	438	502
Service Time	6.311	5.573	5.478	4.487	5.004	4.265	5.96	4.906
HCM Lane V/C Ratio	0.241	0.087	0.741	0.032	0.916	0.04	0.559	0.225
HCM Control Delay	14	11.3	29.4	9.7	50	9.5	20.8	12
HCM Lane LOS	B	B	D	A	E	A	C	B
HCM 95th-tile Q	0.9	0.3	6.1	0.1	10.8	0.1	3.3	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	161	17	18	432	22	2	97	39	154	86	111
Future Volume (vph)	178	161	17	18	432	22	2	97	39	154	86	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	66.0	66.0	66.0	66.0	66.0		34.0	34.0		34.0	34.0	
Total Split (%)	66.0%	66.0%	66.0%	66.0%	66.0%		34.0%	34.0%		34.0%	34.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	161	17	18	432	22	2	97	39	154	86	111
Future Volume (veh/h)	178	161	17	18	432	22	2	97	39	154	86	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	169	18	19	455	23	2	102	41	162	91	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	468	407	1085	60	1178	58	209	286	115	268	167	215
Arrive On Green	0.46	0.46	0.46	0.68	0.68	0.68	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	604	595	1585	32	1719	85	1174	1269	510	1245	743	955
Grp Volume(v), veh/h	356	0	18	497	0	0	2	0	143	162	0	208
Grp Sat Flow(s),veh/h/ln	1199	0	1585	1837	0	0	1174	0	1779	1245	0	1698
Q Serve(g_s), s	9.1	0.0	0.6	0.0	0.0	0.0	0.2	0.0	6.8	12.6	0.0	10.8
Cycle Q Clear(g_c), s	20.6	0.0	0.6	11.5	0.0	0.0	11.0	0.0	6.8	19.4	0.0	10.8
Prop In Lane	0.53		1.00	0.04		0.05	1.00		0.29	1.00		0.56
Lane Grp Cap(c), veh/h	876	0	1085	1295	0	0	209	0	400	268	0	382
V/C Ratio(X)	0.41	0.00	0.02	0.38	0.00	0.00	0.01	0.00	0.36	0.60	0.00	0.54
Avail Cap(c_a), veh/h	876	0	1085	1295	0	0	291	0	525	355	0	501
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	8.7	6.8	0.0	0.0	39.0	0.0	32.6	40.8	0.0	34.2
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.5	2.2	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.2	4.3	0.0	0.0	0.0	0.0	3.0	4.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	0.0	8.7	7.6	0.0	0.0	39.1	0.0	33.2	43.0	0.0	35.4
LnGrp LOS	B	A	A	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h		374			497			145			370	
Approach Delay, s/veh		15.0			7.6			33.3			38.7	
Approach LOS		B			A			C			D	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	73.0	27.0	73.0	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	61.5	29.5	61.5	29.5
Max Q Clear Time (g_c+I1), s	22.6	21.4	13.5	13.0
Green Ext Time (p_c), s	3.2	1.1	3.7	0.6

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	259	1	1	165	2	1
Future Volume (vph)	259	1	1	165	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

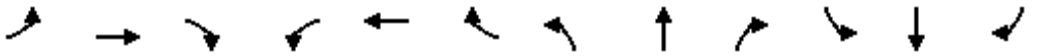
Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	259	1	1	165	2	1
Future Vol, veh/h	259	1	1	165	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	1	1	179	2	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	96	91	0	0	180	0
Stage 1	91	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	903	967	-	-	1396	-
Stage 1	933	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	967	-	-	1396	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	1017	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	5.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	902	1396	-
HCM Lane V/C Ratio	-	-	0.313	0.002	-
HCM Control Delay (s)	-	-	10.8	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	503	173	160	481	0	0	0	0	29	1	306
Future Volume (vph)	0	503	173	160	481	0	0	0	0	29	1	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	503	173	160	481	0	0	0	0	29	1	306
Future Vol, veh/h	0	503	173	160	481	0	0	0	0	29	1	306
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	547	188	174	523	0	0	0	0	32	1	333

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	-	0	0	735	0	0		1512	1606	523
Stage 1	-	-	-	-	-	-		871	871	-
Stage 2	-	-	-	-	-	-		641	735	-
Critical Hdwy	-	-	-	4.12	-	-		6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-		3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	870	-	0		132	105	554
Stage 1	0	-	-	-	-	0		410	368	-
Stage 2	0	-	-	-	-	0		525	425	-
Platoon blocked, %		-	-		-					
Mov Cap-1 Maneuver	-	-	-	870	-	-		95	0	554
Mov Cap-2 Maneuver	-	-	-	-	-	-		95	0	-
Stage 1	-	-	-	-	-	-		410	0	-
Stage 2	-	-	-	-	-	-		377	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	24.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	870	-	95	554
HCM Lane V/C Ratio	-	-	0.2	-	0.343	0.6
HCM Control Delay (s)	-	-	10.2	0	61.5	20.8
HCM Lane LOS	-	-	B	A	F	C
HCM 95th %tile Q(veh)	-	-	0.7	-	1.3	3.9

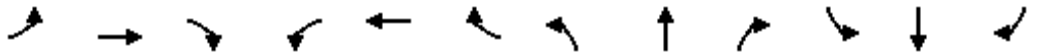
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	503	173	160	481	0	0	0	0	29	1	306
Future Volume (vph)	0	503	173	160	481	0	0	0	0	29	1	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases				6						4		4
Detector Phase		2		6	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5		22.5	22.5					22.5	22.5	22.5
Total Split (s)		77.5		77.5	77.5					22.5	22.5	22.5
Total Split (%)		77.5%		77.5%	77.5%					22.5%	22.5%	22.5%
Yellow Time (s)		3.5		3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0						0.0	0.0
Total Lost Time (s)		4.5			4.5						4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max		C-Max	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps

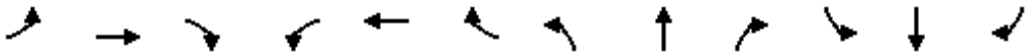




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	503	173	160	481	0	0	0	0	29	1	306
Future Volume (veh/h)	0	503	173	160	481	0	0	0	0	29	1	306
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	547	188	174	523	0				32	1	333
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	971	334	226	641	0				311	10	285
Arrive On Green	0.00	0.73	0.73	1.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1331	457	248	878	0				1730	54	1585
Grp Volume(v), veh/h	0	0	735	697	0	0				33	0	333
Grp Sat Flow(s),veh/h/ln	0	0	1788	1126	0	0				1784	0	1585
Q Serve(g_s), s	0.0	0.0	18.8	33.9	0.0	0.0				1.5	0.0	18.0
Cycle Q Clear(g_c), s	0.0	0.0	18.8	52.8	0.0	0.0				1.5	0.0	18.0
Prop In Lane	0.00		0.26	0.25		0.00				0.97		1.00
Lane Grp Cap(c), veh/h	0	0	1305	867	0	0				321	0	285
V/C Ratio(X)	0.00	0.00	0.56	0.80	0.00	0.00				0.10	0.00	1.17
Avail Cap(c_a), veh/h	0	0	1305	867	0	0				321	0	285
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.86	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	6.2	4.4	0.0	0.0				34.3	0.0	41.0
Incr Delay (d2), s/veh	0.0	0.0	1.8	6.8	0.0	0.0				0.6	0.0	106.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	6.4	4.7	0.0	0.0				0.7	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	8.0	11.2	0.0	0.0				34.9	0.0	147.4
LnGrp LOS	A	A	A	B	A	A				C	A	F
Approach Vol, veh/h		735			697						366	
Approach Delay, s/veh		8.0			11.2						137.2	
Approach LOS		A			B						F	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		77.5		22.5		77.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		73.0		18.0		73.0						
Max Q Clear Time (g_c+I1), s		20.8		20.0		54.8						
Green Ext Time (p_c), s		6.7		0.0		5.8						

Intersection Summary		
HCM 6th Ctrl Delay		35.5
HCM 6th LOS		D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	272	0	0	435	175	206	1	125	0	0	0
Future Volume (vph)	259	272	0	0	435	175	206	1	125	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	103.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	259	272	0	0	435	175	206	1	125	0	0	0
Future Vol, veh/h	259	272	0	0	435	175	206	1	125	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	282	296	0	0	473	190	224	1	136	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	663	0	-	-	-	0	1428	1523	296
Stage 1	-	-	-	-	-	-	860	860	-
Stage 2	-	-	-	-	-	-	568	663	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	926	-	0	0	-	-	~ 149	118	743
Stage 1	-	-	0	0	-	-	414	373	-
Stage 2	-	-	0	0	-	-	567	459	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	926	-	-	-	-	-	~ 95	0	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 95	0	-
Stage 1	-	-	-	-	-	-	263	0	-
Stage 2	-	-	-	-	-	-	567	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.2	0	$ 452.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	95	743	926	-	-	-
HCM Lane V/C Ratio	2.368	0.183	0.304	-	-	-
HCM Control Delay (s)	$ 718.5	10.9	10.6	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	20.4	0.7	1.3	-	-	-

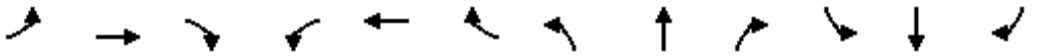
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	272	0	0	435	175	206	1	125	0	0	0
Future Volume (vph)	259	272	0	0	435	175	206	1	125	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	22.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	77.5	77.5			77.5		22.5	22.5	22.5			
Total Split (%)	77.5%	77.5%			77.5%		22.5%	22.5%	22.5%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		4.5			4.5			4.5	4.5			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None	None			

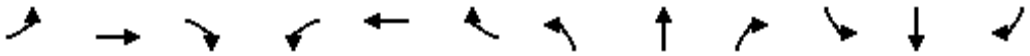
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	272	0	0	435	175	206	1	125	0	0	0
Future Volume (veh/h)	259	272	0	0	435	175	206	1	125	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	282	296	0	0	473	190	224	1	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	456	447	0	0	965	388	265	1	236			
Arrive On Green	1.00	1.00	0.00	0.00	1.00	1.00	0.15	0.15	0.15			
Sat Flow, veh/h	530	588	0	0	1269	510	1774	8	1585			
Grp Volume(v), veh/h	578	0	0	0	0	663	225	0	136			
Grp Sat Flow(s),veh/h/ln	1117	0	0	0	0	1779	1782	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	8.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	8.0			
Prop In Lane	0.49		0.00	0.00		0.29	1.00		1.00			
Lane Grp Cap(c), veh/h	904	0	0	0	0	1353	266	0	236			
V/C Ratio(X)	0.64	0.00	0.00	0.00	0.00	0.49	0.85	0.00	0.58			
Avail Cap(c_a), veh/h	904	0	0	0	0	1353	321	0	285			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.81	0.00	0.00	0.00	0.00	0.86	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	41.4	0.0	39.6			
Incr Delay (d2), s/veh	2.8	0.0	0.0	0.0	0.0	1.1	16.1	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.0	0.0	0.4	6.5	0.0	3.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.8	0.0	0.0	0.0	0.0	1.1	57.5	0.0	41.8			
LnGrp LOS	A	A	A	A	A	A	E	A	D			
Approach Vol, veh/h		578			663			361				
Approach Delay, s/veh		2.8			1.1			51.6				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		80.6				80.6		19.4				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		73.0				73.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0				2.0		14.3				
Green Ext Time (p_c), s		7.0				5.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	198	12	16	455	58	7	431	32	39	21	148
Future Volume (vph)	188	198	12	16	455	58	7	431	32	39	21	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	92.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	188	198	12	16	455	58	7	431	32	39	21	148
Future Vol, veh/h	188	198	12	16	455	58	7	431	32	39	21	148
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	198	208	13	17	479	61	7	454	34	41	22	156
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	78.4	124	101.9	17.9
HCM LOS	F	F	F	C

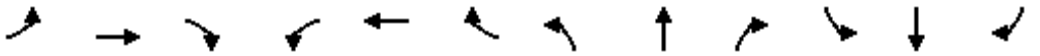
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	49%	0%	3%	0%	65%	0%
Vol Thru, %	98%	0%	51%	0%	97%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	438	32	386	12	471	58	60	148
LT Vol	7	0	188	0	16	0	39	0
Through Vol	431	0	198	0	455	0	21	0
RT Vol	0	32	0	12	0	58	0	148
Lane Flow Rate	461	34	406	13	496	61	63	156
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.109	0.074	1.008	0.028	1.193	0.135	0.176	0.389
Departure Headway (Hd)	9.197	8.455	9.692	8.701	9.153	8.403	10.951	9.862
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	397	426	378	414	402	429	330	368
Service Time	6.897	6.155	7.392	6.401	6.853	6.103	8.651	7.562
HCM Lane V/C Ratio	1.161	0.08	1.074	0.031	1.234	0.142	0.191	0.424
HCM Control Delay	108.5	11.8	80.5	11.7	137.7	12.4	16	18.7
HCM Lane LOS	F	B	F	B	F	B	C	C
HCM 95th-tile Q	15.7	0.2	12	0.1	18.8	0.5	0.6	1.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	198	12	16	455	58	7	431	32	39	21	148
Future Volume (vph)	188	198	12	16	455	58	7	431	32	39	21	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		38.0	38.0		38.0	38.0	
Total Split (%)	62.0%	62.0%	62.0%	62.0%	62.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	198	12	16	455	58	7	431	32	39	21	148
Future Volume (veh/h)	188	198	12	16	455	58	7	431	32	39	21	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	208	13	17	479	61	7	454	34	41	22	156
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	336	946	52	952	119	347	539	40	133	63	444
Arrive On Green	1.00	1.00	1.00	0.60	0.60	0.60	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	507	563	1585	25	1595	199	1206	1718	129	908	200	1416
Grp Volume(v), veh/h	406	0	13	557	0	0	7	0	488	41	0	178
Grp Sat Flow(s),veh/h/ln	1070	0	1585	1819	0	0	1206	0	1847	908	0	1616
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	24.7	4.4	0.0	8.5
Cycle Q Clear(g_c), s	0.1	0.0	0.0	17.6	0.0	0.0	9.0	0.0	24.7	29.1	0.0	8.5
Prop In Lane	0.49		1.00	0.03		0.11	1.00		0.07	1.00		0.88
Lane Grp Cap(c), veh/h	692	0	946	1123	0	0	347	0	579	133	0	506
V/C Ratio(X)	0.59	0.00	0.01	0.50	0.00	0.00	0.02	0.00	0.84	0.31	0.00	0.35
Avail Cap(c_a), veh/h	692	0	946	1123	0	0	374	0	619	152	0	541
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.00	0.53	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.1	0.0	0.1	11.7	0.0	0.0	29.9	0.0	32.0	45.6	0.0	26.5
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.6	0.0	0.0	0.0	0.0	9.8	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	7.1	0.0	0.0	0.1	0.0	12.3	1.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.0	0.0	0.1	13.3	0.0	0.0	30.0	0.0	41.8	46.9	0.0	26.9
LnGrp LOS	A	A	A	B	A	A	C	A	D	D	A	C
Approach Vol, veh/h		419			557			495			219	
Approach Delay, s/veh		2.0			13.3			41.7			30.6	
Approach LOS		A			B			D			C	

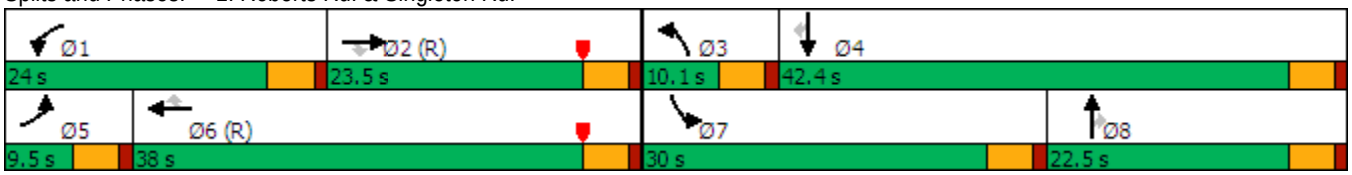
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		64.2		35.8		64.2		35.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		57.5		33.5		57.5		33.5				
Max Q Clear Time (g_c+I1), s		2.1		31.1		19.6		26.7				
Green Ext Time (p_c), s		3.9		0.3		4.3		1.8				

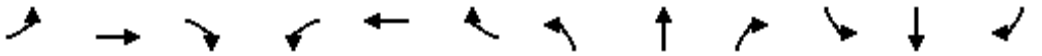
Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	109	21	278	172	95	21	59	197	368	27	1
Future Volume (vph)	1	109	21	278	172	95	21	59	197	368	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	23.5	23.5	24.0	38.0	38.0	10.1	22.5	22.5	30.0	42.4	42.4
Total Split (%)	9.5%	23.5%	23.5%	24.0%	38.0%	38.0%	10.1%	22.5%	22.5%	30.0%	42.4%	42.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.

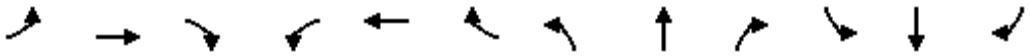




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	109	21	278	172	95	21	59	197	368	27	1
Future Volume (veh/h)	1	109	21	278	172	95	21	59	197	368	27	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	118	23	302	187	103	23	64	214	400	29	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	840	375	333	1499	669	42	290	245	431	1326	591
Arrive On Green	0.00	0.24	0.24	0.19	0.42	0.42	0.02	0.15	0.15	0.24	0.37	0.37
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	1	118	23	302	187	103	23	64	214	400	29	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.1	2.6	1.1	16.6	3.2	4.0	1.3	3.0	13.2	22.0	0.5	0.0
Cycle Q Clear(g_c), s	0.1	2.6	1.1	16.6	3.2	4.0	1.3	3.0	13.2	22.0	0.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	840	375	333	1499	669	42	290	245	431	1326	591
V/C Ratio(X)	0.41	0.14	0.06	0.91	0.12	0.15	0.55	0.22	0.87	0.93	0.02	0.00
Avail Cap(c_a), veh/h	89	840	375	347	1499	669	100	337	285	454	1347	601
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	30.2	29.6	39.8	17.6	17.9	48.3	37.0	41.3	37.1	19.8	19.7
Incr Delay (d2), s/veh	84.1	0.3	0.3	25.9	0.2	0.5	10.6	0.4	22.0	24.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	0.5	9.6	1.3	1.5	0.7	1.4	6.6	12.4	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.0	30.5	29.9	65.7	17.8	18.4	58.9	37.4	63.3	61.9	19.8	19.7
LnGrp LOS	F	C	C	E	B	B	E	D	E	E	B	B
Approach Vol, veh/h		142			592			301			430	
Approach Delay, s/veh		31.1			42.3			57.4			59.0	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	28.1	6.9	41.8	4.6	46.7	28.7	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	19.0	5.6	37.9	5.0	33.5	25.5	18.0
Max Q Clear Time (g_c+I1), s	18.6	4.6	3.3	2.5	2.1	6.0	24.0	15.2
Green Ext Time (p_c), s	0.1	0.6	0.0	0.1	0.0	1.5	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	90	1	103	1	1	27	103	1	1
Future Volume (vph)	1	1	1	90	1	103	1	1	27	103	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

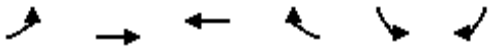
Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	90	1	103	1	1	27	103	1	1
Future Vol, veh/h	1	1	1	90	1	103	1	1	27	103	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	98	1	112	1	1	29	112	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	2	0	0	201	313	1	256	257	57
Stage 1	-	-	-	-	-	-	4	4	-	253	253	-
Stage 2	-	-	-	-	-	-	197	309	-	3	4	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1474	-	-	1619	-	-	739	601	1083	676	646	997
Stage 1	-	-	-	-	-	-	1017	892	-	729	696	-
Stage 2	-	-	-	-	-	-	786	658	-	1019	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1619	-	-	703	564	1083	626	606	997
Mov Cap-2 Maneuver	-	-	-	-	-	-	703	564	-	626	606	-
Stage 1	-	-	-	-	-	-	1016	891	-	728	654	-
Stage 2	-	-	-	-	-	-	736	618	-	990	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	3.4	8.6	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1031	1474	-	-	1619	-	-	628
HCM Lane V/C Ratio	0.031	0.001	-	-	0.06	-	-	0.182
HCM Control Delay (s)	8.6	7.4	-	-	7.4	-	-	12
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	676	513	273	0	32
Future Volume (vph)	0	676	513	273	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

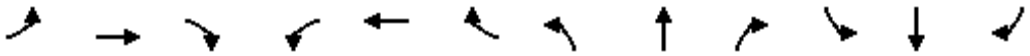
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	676	513	273	0	32
Future Vol, veh/h	0	676	513	273	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	735	558	297	0	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	428
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	575
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	575
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	575
HCM Lane V/C Ratio	-	-	-	0.06
HCM Control Delay (s)	-	-	-	11.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	104	290	1	1	104	4	48	1	4	1
Future Volume (vph)	1	1	104	290	1	1	104	4	48	1	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

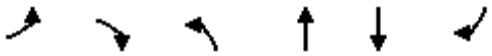
Intersection	
Int Delay, s/veh	13

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	104	290	1	1	104	4	48	1	4	1
Future Vol, veh/h	1	1	104	290	1	1	104	4	48	1	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	113	315	1	1	113	4	52	1	4	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	236	289	3	261	263	28	5	0	0	56	0	0
Stage 1	7	7	-	256	256	-	-	-	-	-	-	-
Stage 2	229	282	-	5	7	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	699	620	1080	671	641	1041	1615	-	-	1547	-	-
Stage 1	1013	889	-	726	694	-	-	-	-	-	-	-
Stage 2	753	676	-	1016	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	660	576	1080	568	595	1041	1615	-	-	1547	-	-
Mov Cap-2 Maneuver	660	576	-	568	595	-	-	-	-	-	-	-
Stage 1	942	888	-	675	645	-	-	-	-	-	-	-
Stage 2	698	629	-	908	888	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	19	4.9	1.2
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1615	-	-	1065	569	1547	-	-
HCM Lane V/C Ratio	0.07	-	-	0.108	0.558	0.001	-	-
HCM Control Delay (s)	7.4	-	-	8.8	19	7.3	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	3.4	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	7	22	267	289	37
Future Volume (vph)	11	7	22	267	289	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	0			0
Taper Length (ft)	90		90			
Link Speed (mph)	30			30	30	
Link Distance (ft)	312			1104	522	
Travel Time (s)	7.1			25.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

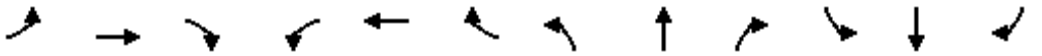
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	7	22	267	289	37
Future Vol, veh/h	11	7	22	267	289	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	8	24	290	314	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	672	334	354	0	-	0
Stage 1	334	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	421	708	1205	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	411	708	1205	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1205	-	491	-	-
HCM Lane V/C Ratio	0.02	-	0.04	-	-
HCM Control Delay (s)	8	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	391	128	121	521	0	0	0	0	54	1	294
Future Volume (vph)	0	391	128	121	521	0	0	0	0	54	1	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	391	128	121	521	0	0	0	0	54	1	294
Future Vol, veh/h	0	391	128	121	521	0	0	0	0	54	1	294
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	425	139	132	566	0	0	0	0	59	1	320

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	564	0	0			1325	1394	566
Stage 1	-	-	-	-	-	-			830	830	-
Stage 2	-	-	-	-	-	-			495	564	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1008	-	0			172	141	524
Stage 1	0	-	-	-	-	0			428	385	-
Stage 2	0	-	-	-	-	0			613	508	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1008	-	-			139	0	524
Mov Cap-2 Maneuver	-	-	-	-	-	-			139	0	-
Stage 1	-	-	-	-	-	-			428	0	-
Stage 2	-	-	-	-	-	-			496	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.7	26.3
HCM LOS			D

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1008	-	139	524
HCM Lane V/C Ratio	-	-	0.13	-	0.43	0.61
HCM Control Delay (s)	-	-	9.1	0	49.1	22
HCM Lane LOS	-	-	A	A	E	C
HCM 95th %tile Q(veh)	-	-	0.4	-	1.9	4

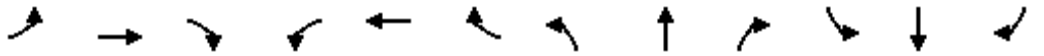
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	391	128	121	521	0	0	0	0	54	1	294
Future Volume (vph)	0	391	128	121	521	0	0	0	0	54	1	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases				6						4		4
Detector Phase		2		6	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5		22.5	22.5					22.5	22.5	22.5
Total Split (s)		77.5		77.5	77.5					22.5	22.5	22.5
Total Split (%)		77.5%		77.5%	77.5%					22.5%	22.5%	22.5%
Yellow Time (s)		3.5		3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0						0.0	0.0
Total Lost Time (s)		4.5			4.5						4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max		C-Max	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps

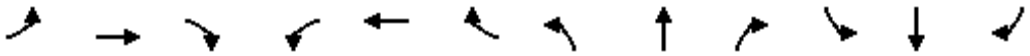




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	391	128	121	521	0	0	0	0	54	1	294
Future Volume (veh/h)	0	391	128	121	521	0	0	0	0	54	1	294
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	425	139	132	566	0				59	1	320
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	985	322	217	905	0				316	5	285
Arrive On Green	0.00	0.73	0.73	1.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1350	441	239	1240	0				1753	30	1585
Grp Volume(v), veh/h	0	0	564	698	0	0				60	0	320
Grp Sat Flow(s),veh/h/ln	0	0	1791	1479	0	0				1783	0	1585
Q Serve(g_s), s	0.0	0.0	12.4	6.8	0.0	0.0				2.9	0.0	18.0
Cycle Q Clear(g_c), s	0.0	0.0	12.4	19.2	0.0	0.0				2.9	0.0	18.0
Prop In Lane	0.00		0.25	0.19		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	0	1307	1122	0	0				321	0	285
V/C Ratio(X)	0.00	0.00	0.43	0.62	0.00	0.00				0.19	0.00	1.12
Avail Cap(c_a), veh/h	0	0	1307	1122	0	0				321	0	285
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.87	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	5.3	0.3	0.0	0.0				34.8	0.0	41.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	2.3	0.0	0.0				1.3	0.0	90.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.2	0.7	0.0	0.0				1.3	0.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	6.4	2.6	0.0	0.0				36.1	0.0	131.1
LnGrp LOS	A	A	A	A	A	A				D	A	F
Approach Vol, veh/h		564			698						380	
Approach Delay, s/veh		6.4			2.6						116.1	
Approach LOS		A			A						F	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		77.5		22.5		77.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		73.0		18.0		73.0						
Max Q Clear Time (g_c+I1), s		14.4		20.0		21.2						
Green Ext Time (p_c), s		4.5		0.0		6.9						

Intersection Summary												
HCM 6th Ctrl Delay			30.1									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	257	0	0	443	167	199	1	140	0	0	0
Future Volume (vph)	187	257	0	0	443	167	199	1	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	50.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	187	257	0	0	443	167	199	1	140	0	0	0
Future Vol, veh/h	187	257	0	0	443	167	199	1	140	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	203	279	0	0	482	182	216	1	152	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	664	0	-	-	-	0	1258	1349	279
Stage 1	-	-	-	-	-	-	685	685	-
Stage 2	-	-	-	-	-	-	573	664	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	925	-	0	0	-	-	~ 189	151	760
Stage 1	-	-	0	0	-	-	500	448	-
Stage 2	-	-	0	0	-	-	564	458	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	925	-	-	-	-	-	~ 140	0	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 140	0	-
Stage 1	-	-	-	-	-	-	370	0	-
Stage 2	-	-	-	-	-	-	564	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.2	0	203.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	140	760	925	-	-	-
HCM Lane V/C Ratio	1.553	0.2	0.22	-	-	-
HCM Control Delay (s)	$ 338	10.9	10	0	-	-
HCM Lane LOS	F	B	A	A	-	-
HCM 95th %tile Q(veh)	15.1	0.7	0.8	-	-	-

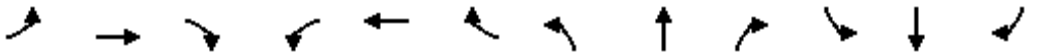
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	257	0	0	443	167	199	1	140	0	0	0
Future Volume (vph)	187	257	0	0	443	167	199	1	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	22.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	77.5	77.5			77.5		22.5	22.5	22.5			
Total Split (%)	77.5%	77.5%			77.5%		22.5%	22.5%	22.5%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		4.5			4.5			4.5	4.5			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None	None			

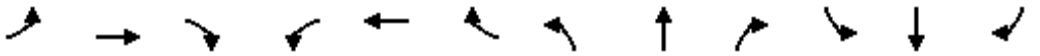
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	257	0	0	443	167	199	1	140	0	0	0
Future Volume (veh/h)	187	257	0	0	443	167	199	1	140	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	203	279	0	0	482	182	216	1	152			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	414	550	0	0	989	374	258	1	230			
Arrive On Green	1.00	1.00	0.00	0.00	1.00	1.00	0.15	0.15	0.15			
Sat Flow, veh/h	475	720	0	0	1294	489	1773	8	1585			
Grp Volume(v), veh/h	482	0	0	0	0	664	217	0	152			
Grp Sat Flow(s),veh/h/ln	1194	0	0	0	0	1782	1782	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	11.9	0.0	9.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	11.9	0.0	9.1			
Prop In Lane	0.42		0.00	0.00		0.27	1.00		1.00			
Lane Grp Cap(c), veh/h	964	0	0	0	0	1363	259	0	230			
V/C Ratio(X)	0.50	0.00	0.00	0.00	0.00	0.49	0.84	0.00	0.66			
Avail Cap(c_a), veh/h	964	0	0	0	0	1363	321	0	285			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.00	0.00	0.00	0.00	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	41.6	0.0	40.4			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.0	1.1	14.7	0.0	3.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.0	0.0	0.4	6.2	0.0	3.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.0	0.0	0.0	0.0	1.1	56.3	0.0	44.3			
LnGrp LOS	A	A	A	A	A	A	E	A	D			
Approach Vol, veh/h		482			664			369				
Approach Delay, s/veh		1.7			1.1			51.4				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		81.0				81.0		19.0				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		73.0				73.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0				2.0		13.9				
Green Ext Time (p_c), s		5.1				5.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			13.5									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	182	17	18	465	22	2	97	39	154	86	144
Future Volume (vph)	199	182	17	18	465	22	2	97	39	154	86	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	43.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	199	182	17	18	465	22	2	97	39	154	86	144
Future Vol, veh/h	199	182	17	18	465	22	2	97	39	154	86	144
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	203	186	17	18	474	22	2	99	40	157	88	147
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	38.8	73.5	13.9	18.7
HCM LOS	E	F	B	C

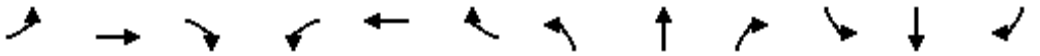
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	52%	0%	4%	0%	64%	0%
Vol Thru, %	98%	0%	48%	0%	96%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	39	381	17	483	22	240	144
LT Vol	2	0	199	0	18	0	154	0
Through Vol	97	0	182	0	465	0	86	0
RT Vol	0	39	0	17	0	22	0	144
Lane Flow Rate	101	40	389	17	493	22	245	147
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.244	0.089	0.837	0.033	1.03	0.042	0.564	0.296
Departure Headway (Hd)	9.076	8.334	8.019	7.027	7.527	6.788	8.595	7.537
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	398	433	455	513	488	530	424	480
Service Time	6.776	6.034	5.719	4.727	5.229	4.49	6.295	5.237
HCM Lane V/C Ratio	0.254	0.092	0.855	0.033	1.01	0.042	0.578	0.306
HCM Control Delay	14.7	11.8	40.1	10	76.4	9.8	21.8	13.4
HCM Lane LOS	B	B	E	A	F	A	C	B
HCM 95th-tile Q	0.9	0.3	8.1	0.1	14.5	0.1	3.4	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	182	17	18	465	22	2	97	39	154	86	144
Future Volume (vph)	199	182	17	18	465	22	2	97	39	154	86	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	68.0	68.0	68.0	68.0	68.0		32.0	32.0		32.0	32.0	
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%		32.0%	32.0%		32.0%	32.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	182	17	18	465	22	2	97	39	154	86	144
Future Volume (veh/h)	199	182	17	18	465	22	2	97	39	154	86	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	209	192	18	19	489	23	2	102	41	162	91	152
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	455	387	1086	58	1184	55	178	285	115	267	141	236
Arrive On Green	0.91	0.91	0.91	0.69	0.69	0.69	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	583	565	1585	30	1728	80	1137	1269	510	1245	630	1052
Grp Volume(v), veh/h	401	0	18	531	0	0	2	0	143	162	0	243
Grp Sat Flow(s),veh/h/ln	1148	0	1585	1838	0	0	1137	0	1779	1245	0	1681
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	6.8	12.6	0.0	13.1
Cycle Q Clear(g_c), s	7.0	0.0	0.1	12.6	0.0	0.0	13.3	0.0	6.8	19.4	0.0	13.1
Prop In Lane	0.52		1.00	0.04		0.04	1.00		0.29	1.00		0.63
Lane Grp Cap(c), veh/h	842	0	1086	1297	0	0	178	0	400	267	0	378
V/C Ratio(X)	0.48	0.00	0.02	0.41	0.00	0.00	0.01	0.00	0.36	0.61	0.00	0.64
Avail Cap(c_a), veh/h	842	0	1086	1297	0	0	236	0	489	330	0	462
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.00	0.77	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	1.6	0.0	1.4	6.9	0.0	0.0	41.1	0.0	32.7	40.9	0.0	35.1
Incr Delay (d2), s/veh	1.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.5	2.2	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	4.7	0.0	0.0	0.0	0.0	3.0	4.0	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.0	1.4	7.9	0.0	0.0	41.2	0.0	33.2	43.1	0.0	37.3
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h		419			531			145			405	
Approach Delay, s/veh		3.0			7.9			33.3			39.6	
Approach LOS		A			A			C			D	

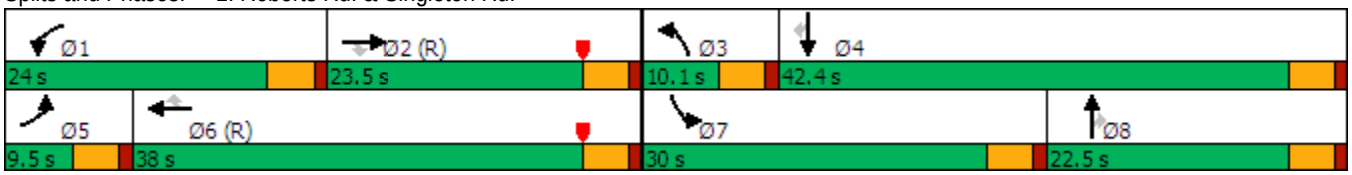
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.0		27.0		73.0		27.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		63.5		27.5		63.5		27.5				
Max Q Clear Time (g_c+I1), s		9.0		21.4		14.6		15.3				
Green Ext Time (p_c), s		3.9		1.1		4.1		0.5				

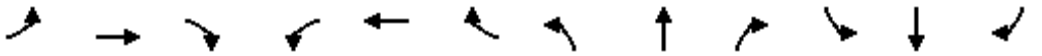
Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	124	11	290	127	107	24	67	198	196	15	1
Future Volume (vph)	1	124	11	290	127	107	24	67	198	196	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	23.5	23.5	24.0	38.0	38.0	10.1	22.5	22.5	30.0	42.4	42.4
Total Split (%)	9.5%	23.5%	23.5%	24.0%	38.0%	38.0%	10.1%	22.5%	22.5%	30.0%	42.4%	42.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.

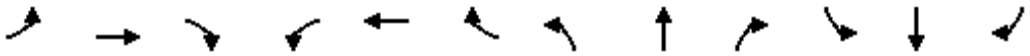




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	124	11	290	127	107	24	67	198	196	15	1
Future Volume (veh/h)	1	124	11	290	127	107	24	67	198	196	15	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	135	12	315	138	116	26	73	215	213	16	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1173	523	345	1856	828	46	291	247	251	962	429
Arrive On Green	0.00	0.33	0.33	0.19	0.52	0.52	0.03	0.16	0.16	0.14	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	1	135	12	315	138	116	26	73	215	213	16	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.1	2.6	0.5	17.3	1.9	3.8	1.4	3.4	13.3	11.7	0.3	0.0
Cycle Q Clear(g_c), s	0.1	2.6	0.5	17.3	1.9	3.8	1.4	3.4	13.3	11.7	0.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1173	523	345	1856	828	46	291	247	251	962	429
V/C Ratio(X)	0.41	0.12	0.02	0.91	0.07	0.14	0.57	0.25	0.87	0.85	0.02	0.00
Avail Cap(c_a), veh/h	89	1173	523	347	1856	828	100	337	285	454	1347	601
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	23.3	22.6	39.5	11.9	12.3	48.2	37.1	41.3	41.9	26.7	26.6
Incr Delay (d2), s/veh	84.1	0.2	0.1	27.7	0.1	0.4	10.6	0.4	22.1	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.1	0.2	10.1	0.8	1.4	0.8	1.6	6.6	5.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.0	23.5	22.7	67.2	12.0	12.7	58.7	37.6	63.3	49.7	26.7	26.6
LnGrp LOS	F	C	C	E	B	B	E	D	E	D	C	C
Approach Vol, veh/h		148			569			314			230	
Approach Delay, s/veh		24.2			42.7			57.0			48.0	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	37.5	7.1	31.6	4.6	56.7	18.6	20.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	19.0	5.6	37.9	5.0	33.5	25.5	18.0
Max Q Clear Time (g_c+I1), s	19.3	4.6	3.4	2.3	2.1	5.8	13.7	15.3
Green Ext Time (p_c), s	0.0	0.6	0.0	0.1	0.0	1.2	0.5	0.3

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	34	1	117	1	1	81	55	1	1
Future Volume (vph)	1	1	1	34	1	117	1	1	81	55	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

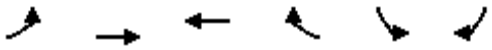
Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	34	1	117	1	1	81	55	1	1
Future Vol, veh/h	1	1	1	34	1	117	1	1	81	55	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	37	1	127	1	1	88	60	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	2	0	0	79	206	1	142	143	64
Stage 1	-	-	-	-	-	-	4	4	-	139	139	-
Stage 2	-	-	-	-	-	-	75	202	-	3	4	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1456	-	-	1619	-	-	901	690	1083	814	747	987
Stage 1	-	-	-	-	-	-	1017	892	-	850	781	-
Stage 2	-	-	-	-	-	-	926	733	-	1019	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1456	-	-	1619	-	-	883	673	1083	733	729	987
Mov Cap-2 Maneuver	-	-	-	-	-	-	883	673	-	733	729	-
Stage 1	-	-	-	-	-	-	1016	891	-	849	763	-
Stage 2	-	-	-	-	-	-	903	716	-	934	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	1.6	8.7	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1072	1456	-	-	1619	-	-	736
HCM Lane V/C Ratio	0.084	0.001	-	-	0.023	-	-	0.084
HCM Control Delay (s)	8.7	7.5	-	-	7.3	-	-	10.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	519	506	308	0	17
Future Volume (vph)	0	519	506	308	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

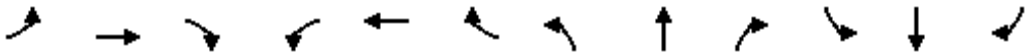
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	519	506	308	0	17
Future Vol, veh/h	0	519	506	308	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	564	550	335	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	443
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	562
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	562
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	562
HCM Lane V/C Ratio	-	-	-	0.033
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	55	153	1	1	117	4	54	1	5	1
Future Volume (vph)	1	1	55	153	1	1	117	4	54	1	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

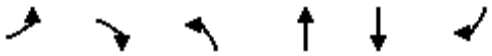
Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	1	1	55	153	1	1	117	4	54	1	5	1
Future Vol, veh/h	1	1	55	153	1	1	117	4	54	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	60	166	1	1	127	4	59	1	5	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	265	325	3	293	296	32	6	0	0	63	0	0
Stage 1	8	8	-	288	288	-	-	-	-	-	-	-
Stage 2	257	317	-	5	8	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	666	592	1080	637	614	1035	1613	-	-	1538	-	-
Stage 1	1012	889	-	695	672	-	-	-	-	-	-	-
Stage 2	725	653	-	1016	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	624	545	1080	564	565	1035	1613	-	-	1538	-	-
Mov Cap-2 Maneuver	624	545	-	564	565	-	-	-	-	-	-	-
Stage 1	932	888	-	640	619	-	-	-	-	-	-	-
Stage 2	666	601	-	958	888	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	14	5	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1613	-	-	1049	566	1538	-	-
HCM Lane V/C Ratio	0.079	-	-	0.059	0.298	0.001	-	-
HCM Control Delay (s)	7.4	-	-	8.6	14	7.3	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	1.2	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	20	8	257	302	14
Future Volume (vph)	33	20	8	257	302	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	0			0
Taper Length (ft)	90		90			
Link Speed (mph)	30			30	30	
Link Distance (ft)	312			1104	522	
Travel Time (s)	7.1			25.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	20	8	257	302	14
Future Vol, veh/h	33	20	8	257	302	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	22	9	279	328	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	633	336	343	0	-	0
Stage 1	336	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	444	706	1216	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	440	706	1216	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	754	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1216	-	513	-	-
HCM Lane V/C Ratio	0.007	-	0.112	-	-
HCM Control Delay (s)	8	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

ATTACHMENT 3:

PHASE 3 (2026) WITHOUT AND WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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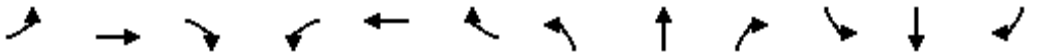


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	239	1	166	229	0	0	0	0	35	1	5
Future Volume (vph)	0	239	1	166	229	0	0	0	0	35	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	239	1	166	229	0	0	0	0	35	1	5
Future Vol, veh/h	0	239	1	166	229	0	0	0	0	35	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	260	1	180	249	0	0	0	0	38	1	5

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	261	0	0			870	870	249
Stage 1	-	-	-	-	-	-			609	609	-
Stage 2	-	-	-	-	-	-			261	261	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1303	-	0			322	290	790
Stage 1	0	-	-	-	-	0			543	485	-
Stage 2	0	-	-	-	-	0			783	692	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1303	-	-			270	0	790
Mov Cap-2 Maneuver	-	-	-	-	-	-			270	0	-
Stage 1	-	-	-	-	-	-			543	0	-
Stage 2	-	-	-	-	-	-			658	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.4	19.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1303	-	270	790
HCM Lane V/C Ratio	-	-	0.138	-	0.145	0.007
HCM Control Delay (s)	-	-	8.2	0	20.6	9.6
HCM Lane LOS	-	-	A	A	C	A
HCM 95th %tile Q(veh)	-	-	0.5	-	0.5	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	262	0	0	393	182	3	1	130	0	0	0
Future Volume (vph)	12	262	0	0	393	182	3	1	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

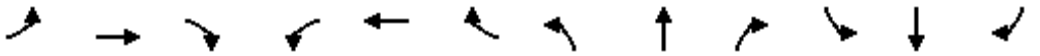
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	262	0	0	393	182	3	1	130	0	0	0
Future Vol, veh/h	12	262	0	0	393	182	3	1	130	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	285	0	0	427	198	3	1	141	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	625	0	-	-	-	0	837	936	285
Stage 1	-	-	-	-	-	-	311	311	-
Stage 2	-	-	-	-	-	-	526	625	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	956	-	0	0	-	-	337	265	754
Stage 1	-	-	0	0	-	-	743	658	-
Stage 2	-	-	0	0	-	-	593	477	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	956	-	-	-	-	-	332	0	754
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	0	-
Stage 1	-	-	-	-	-	-	731	0	-
Stage 2	-	-	-	-	-	-	593	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	332	754	956	-	-	-
HCM Lane V/C Ratio	0.013	0.187	0.014	-	-	-
HCM Control Delay (s)	16	10.9	8.8	0	-	-
HCM Lane LOS	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0	0.7	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	199	12	17	444	60	7	448	33	41	22	125
Future Volume (vph)	181	199	12	17	444	60	7	448	33	41	22	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	88.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	181	199	12	17	444	60	7	448	33	41	22	125
Future Vol, veh/h	181	199	12	17	444	60	7	448	33	41	22	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	191	209	13	18	467	63	7	472	35	43	23	132
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	69	109.2	109.1	16.7
HCM LOS	F	F	F	C

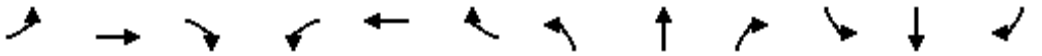
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	48%	0%	4%	0%	65%	0%
Vol Thru, %	98%	0%	52%	0%	96%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	455	33	380	12	461	60	63	125
LT Vol	7	0	181	0	17	0	41	0
Through Vol	448	0	199	0	444	0	22	0
RT Vol	0	33	0	12	0	60	0	125
Lane Flow Rate	479	35	400	13	485	63	66	132
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.135	0.075	0.971	0.027	1.15	0.137	0.184	0.327
Departure Headway (Hd)	8.969	8.23	9.575	8.591	9.052	8.301	10.84	9.752
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	438	380	419	403	435	333	371
Service Time	6.669	5.93	7.275	6.291	6.752	6.001	8.54	7.452
HCM Lane V/C Ratio	1.177	0.08	1.053	0.031	1.203	0.145	0.198	0.356
HCM Control Delay	116.2	11.6	70.8	11.5	121.8	12.3	16	17.1
HCM Lane LOS	F	B	F	B	F	B	C	C
HCM 95th-tile Q	16.9	0.2	11	0.1	17.3	0.5	0.7	1.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	199	12	17	444	60	7	448	33	41	22	125
Future Volume (vph)	181	199	12	17	444	60	7	448	33	41	22	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	20.0	52.0		10.0	42.0		38.0	38.0		38.0	38.0	
Total Split (%)	20.0%	52.0%		10.0%	42.0%		38.0%	38.0%		38.0%	38.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	199	12	17	444	60	7	448	33	41	22	125
Future Volume (veh/h)	181	199	12	17	444	60	7	448	33	41	22	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	191	209	13	18	467	63	7	472	35	43	23	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	908	56	35	673	91	383	557	41	133	78	448
Arrive On Green	0.25	1.00	1.00	0.02	0.42	0.42	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	1742	108	1781	1614	218	1232	1720	128	892	241	1381
Grp Volume(v), veh/h	191	0	222	18	0	530	7	0	507	43	0	155
Grp Sat Flow(s),veh/h/ln	1781	0	1851	1781	0	1831	1232	0	1847	892	0	1622
Q Serve(g_s), s	10.3	0.0	0.0	1.0	0.0	23.7	0.4	0.0	25.6	4.7	0.0	7.1
Cycle Q Clear(g_c), s	10.3	0.0	0.0	1.0	0.0	23.7	7.6	0.0	25.6	30.3	0.0	7.1
Prop In Lane	1.00		0.06	1.00		0.12	1.00		0.07	1.00		0.85
Lane Grp Cap(c), veh/h	220	0	965	35	0	764	383	0	599	133	0	526
V/C Ratio(X)	0.87	0.00	0.23	0.51	0.00	0.69	0.02	0.00	0.85	0.32	0.00	0.29
Avail Cap(c_a), veh/h	276	0	965	98	0	764	397	0	619	143	0	543
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	0.0	48.5	0.0	23.9	28.1	0.0	31.5	45.6	0.0	25.3
Incr Delay (d2), s/veh	19.8	0.0	0.5	11.2	0.0	5.1	0.0	0.0	10.4	1.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.1	0.6	0.0	11.0	0.1	0.0	12.8	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	0.5	59.7	0.0	29.0	28.1	0.0	41.8	47.0	0.0	25.6
LnGrp LOS	E	A	A	E	A	C	C	A	D	D	A	C
Approach Vol, veh/h		413			548			514			198	
Approach Delay, s/veh		26.5			30.0			41.7			30.2	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	56.6		36.9	16.9	46.2		36.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	47.5		33.5	15.5	37.5		33.5				
Max Q Clear Time (g_c+I1), s	3.0	2.0		32.3	12.3	25.7		27.6				
Green Ext Time (p_c), s	0.0	1.4		0.1	0.2	2.7		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			32.8									
HCM 6th LOS			C									



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	232	1	1	238	1	1
Future Volume (vph)	232	1	1	238	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

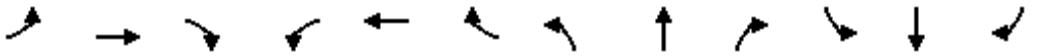
Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	232	1	1	238	1	1
Future Vol, veh/h	232	1	1	238	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	252	1	1	259	1	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	134	131	0	0	260	0
Stage 1	131	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	860	919	-	-	1304	-
Stage 1	895	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	859	919	-	-	1304	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1304	-
HCM Lane V/C Ratio	-	-	0.295	0.001	-
HCM Control Delay (s)	-	-	10.9	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	200	4	126	308	0	0	0	0	56	1	13
Future Volume (vph)	0	200	4	126	308	0	0	0	0	56	1	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	200	4	126	308	0	0	0	0	56	1	13
Future Vol, veh/h	0	200	4	126	308	0	0	0	0	56	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	217	4	137	335	0	0	0	0	61	1	14

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	221	0	0			828	830	335
Stage 1	-	-	-	-	-	-			609	609	-
Stage 2	-	-	-	-	-	-			219	221	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1348	-	0			341	306	707
Stage 1	0	-	-	-	-	0			543	485	-
Stage 2	0	-	-	-	-	0			817	720	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1348	-	-			298	0	707
Mov Cap-2 Maneuver	-	-	-	-	-	-			298	0	-
Stage 1	-	-	-	-	-	-			543	0	-
Stage 2	-	-	-	-	-	-			715	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.3	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1348	-	298	707
HCM Lane V/C Ratio	-	-	0.102	-	0.208	0.02
HCM Control Delay (s)	-	-	8	0	20.2	10.2
HCM Lane LOS	-	-	A	A	C	B
HCM 95th %tile Q(veh)	-	-	0.3	-	0.8	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	248	0	0	430	174	3	1	146	0	0	0
Future Volume (vph)	8	248	0	0	430	174	3	1	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

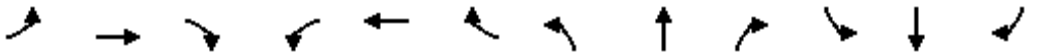
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	248	0	0	430	174	3	1	146	0	0	0
Future Vol, veh/h	8	248	0	0	430	174	3	1	146	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	270	0	0	467	189	3	1	159	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	656	0	-	-	-	0	850	944	270
Stage 1	-	-	-	-	-	-	288	288	-
Stage 2	-	-	-	-	-	-	562	656	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	931	-	0	0	-	-	331	262	769
Stage 1	-	-	0	0	-	-	761	674	-
Stage 2	-	-	0	0	-	-	571	462	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	931	-	-	-	-	-	327	0	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	0	-
Stage 1	-	-	-	-	-	-	753	0	-
Stage 2	-	-	-	-	-	-	571	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	327	769	931	-	-	-
HCM Lane V/C Ratio	0.013	0.206	0.009	-	-	-
HCM Control Delay (s)	16.2	10.9	8.9	0	-	-
HCM Lane LOS	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0	0.8	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	180	18	19	468	23	2	101	41	160	89	134
Future Volume (vph)	196	180	18	19	468	23	2	101	41	160	89	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	44.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	196	180	18	19	468	23	2	101	41	160	89	134
Future Vol, veh/h	196	180	18	19	468	23	2	101	41	160	89	134
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	200	184	18	19	478	23	2	103	42	163	91	137
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	38.4	77.7	14	19.5
HCM LOS	E	F	B	C

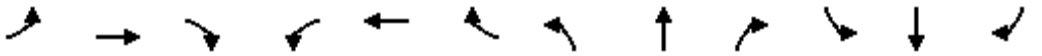
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	52%	0%	4%	0%	64%	0%
Vol Thru, %	98%	0%	48%	0%	96%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	41	376	18	487	23	249	134
LT Vol	2	0	196	0	19	0	160	0
Through Vol	101	0	180	0	468	0	89	0
RT Vol	0	41	0	18	0	23	0	134
Lane Flow Rate	105	42	384	18	497	23	254	137
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.255	0.094	0.832	0.035	1.045	0.045	0.588	0.276
Departure Headway (Hd)	9.114	8.372	8.092	7.1	7.573	6.833	8.643	7.584
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	396	431	449	507	482	527	419	477
Service Time	6.814	6.072	5.792	4.8	5.275	4.535	6.343	5.284
HCM Lane V/C Ratio	0.265	0.097	0.855	0.036	1.031	0.044	0.606	0.287
HCM Control Delay	14.9	11.9	39.8	10.1	80.9	9.9	23	13.1
HCM Lane LOS	B	B	E	B	F	A	C	B
HCM 95th-tile Q	1	0.3	8	0.1	15	0.1	3.7	1.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	180	18	19	468	23	2	101	41	160	89	134
Future Volume (vph)	196	180	18	19	468	23	2	101	41	160	89	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.89	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	25.0	59.2		10.0	44.2		30.8	30.8		30.8	30.8	
Total Split (%)	25.0%	59.2%		10.0%	44.2%		30.8%	30.8%		30.8%	30.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	180	18	19	468	23	2	101	41	160	89	134
Future Volume (veh/h)	196	180	18	19	468	23	2	101	41	160	89	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	184	18	19	478	23	2	103	42	163	91	137
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.89	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	1039	102	37	902	43	191	284	116	266	151	228
Arrive On Green	0.22	1.00	1.00	0.02	0.51	0.51	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	1677	164	1781	1770	85	1153	1263	515	1243	674	1014
Grp Volume(v), veh/h	200	0	202	19	0	501	2	0	145	163	0	228
Grp Sat Flow(s),veh/h/ln	1781	0	1841	1781	0	1855	1153	0	1778	1243	0	1688
Q Serve(g_s), s	10.8	0.0	0.0	1.1	0.0	18.1	0.2	0.0	6.9	12.7	0.0	12.1
Cycle Q Clear(g_c), s	10.8	0.0	0.0	1.1	0.0	18.1	12.3	0.0	6.9	19.6	0.0	12.1
Prop In Lane	1.00		0.09	1.00		0.05	1.00		0.29	1.00		0.60
Lane Grp Cap(c), veh/h	233	0	1141	37	0	945	191	0	399	266	0	379
V/C Ratio(X)	0.86	0.00	0.18	0.52	0.00	0.53	0.01	0.00	0.36	0.61	0.00	0.60
Avail Cap(c_a), veh/h	365	0	1141	98	0	945	236	0	468	313	0	444
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	0.0	48.5	0.0	16.5	40.3	0.0	32.7	41.0	0.0	34.8
Incr Delay (d2), s/veh	11.2	0.0	0.3	11.0	0.0	2.1	0.0	0.0	0.6	2.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.1	0.6	0.0	7.9	0.0	0.0	3.0	4.1	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	0.0	0.3	59.5	0.0	18.6	40.3	0.0	33.3	43.6	0.0	36.4
LnGrp LOS	D	A	A	E	A	B	D	A	C	D	A	D
Approach Vol, veh/h		402			520			147			391	
Approach Delay, s/veh		24.7			20.1			33.4			39.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	66.5		27.0	17.6	55.5		27.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	54.7		26.3	20.5	39.7		26.3				
Max Q Clear Time (g_c+I1), s	3.1	2.0		21.6	12.8	20.1		14.3				
Green Ext Time (p_c), s	0.0	1.3		0.8	0.3	3.2		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		27.9	
HCM 6th LOS		C	



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	319	1	1	202	2	1
Future Volume (vph)	319	1	1	202	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

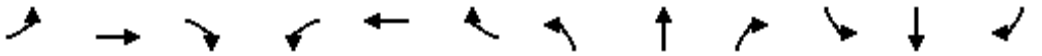
Intersection	
Int Delay, s/veh	7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	319	1	1	202	2	1
Future Vol, veh/h	319	1	1	202	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	347	1	1	220	2	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	116	111	0	0	221	0
Stage 1	111	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	880	942	-	-	1348	-
Stage 1	914	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	942	-	-	1348	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	1017	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	5.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	879	1348	-
HCM Lane V/C Ratio	-	-	0.396	0.002	-
HCM Control Delay (s)	-	-	11.8	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.9	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	586	192	166	543	0	0	0	0	35	1	352
Future Volume (vph)	0	586	192	166	543	0	0	0	0	35	1	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	586	192	166	543	0	0	0	0	35	1	352
Future Vol, veh/h	0	586	192	166	543	0	0	0	0	35	1	352
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	637	209	180	590	0	0	0	0	38	1	383

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	846	0	0			1692	1796	590
Stage 1	-	-	-	-	-	-			950	950	-
Stage 2	-	-	-	-	-	-			742	846	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	791	-	0			102	80	508
Stage 1	0	-	-	-	-	0			376	339	-
Stage 2	0	-	-	-	-	0			471	378	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	791	-	-			67	0	508
Mov Cap-2 Maneuver	-	-	-	-	-	-			67	0	-
Stage 1	-	-	-	-	-	-			376	0	-
Stage 2	-	-	-	-	-	-			311	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	38.6
HCM LOS			E

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	791	-	67	508
HCM Lane V/C Ratio	-	-	0.228	-	0.584	0.753
HCM Control Delay (s)	-	-	10.9	0	116.4	30.6
HCM Lane LOS	-	-	B	A	F	D
HCM 95th %tile Q(veh)	-	-	0.9	-	2.5	6.5

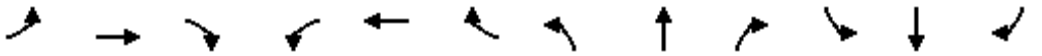
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	586	192	166	543	0	0	0	0	35	1	352
Future Volume (vph)	0	586	192	166	543	0	0	0	0	35	1	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		1	0		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases			2	6						4		4
Detector Phase		2	2	6	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	22.5	22.5					22.5	22.5	22.5
Total Split (s)		77.5	77.5	77.5	77.5					22.5	22.5	22.5
Total Split (%)		77.5%	77.5%	77.5%	77.5%					22.5%	22.5%	22.5%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5						4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps





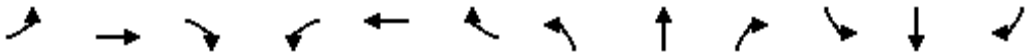
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	586	192	166	543	0	0	0	0	35	1	352
Future Volume (veh/h)	0	586	192	166	543	0	0	0	0	35	1	352
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	637	209	180	590	0				38	1	383
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1365	1157	198	594	0				313	8	502
Arrive On Green	0.00	0.49	0.49	1.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1870	1585	210	813	0				1738	46	2790
Grp Volume(v), veh/h	0	637	209	770	0	0				39	0	383
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1023	0	0				1783	0	1395
Q Serve(g_s), s	0.0	22.5	7.4	50.5	0.0	0.0				1.8	0.0	13.0
Cycle Q Clear(g_c), s	0.0	22.5	7.4	73.0	0.0	0.0				1.8	0.0	13.0
Prop In Lane	0.00		1.00	0.23		0.00				0.97		1.00
Lane Grp Cap(c), veh/h	0	1365	1157	791	0	0				321	0	502
V/C Ratio(X)	0.00	0.47	0.18	0.97	0.00	0.00				0.12	0.00	0.76
Avail Cap(c_a), veh/h	0	1365	1157	791	0	0				321	0	502
HCM Platoon Ratio	1.00	0.67	0.67	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.83	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.7	8.8	10.4	0.0	0.0				34.4	0.0	39.0
Incr Delay (d2), s/veh	0.0	1.1	0.3	23.3	0.0	0.0				0.8	0.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.5	2.5	16.4	0.0	0.0				0.9	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.8	9.1	33.7	0.0	0.0				35.1	0.0	49.5
LnGrp LOS	A	B	A	C	A	A				D	A	D
Approach Vol, veh/h		846			770						422	
Approach Delay, s/veh		12.6			33.7						48.1	
Approach LOS		B			C						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	77.5	22.5	77.5
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	73.0	18.0	73.0
Max Q Clear Time (g_c+I1), s	24.5	15.0	75.0
Green Ext Time (p_c), s	6.0	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	296	326	0	0	471	182	238	1	130	0	0	0
Future Volume (vph)	296	326	0	0	471	182	238	1	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	226.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	296	326	0	0	471	182	238	1	130	0	0	0
Future Vol, veh/h	296	326	0	0	471	182	238	1	130	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	322	354	0	0	512	198	259	1	141	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	710	0	-	-	-	0	1609	1708	354
Stage 1	-	-	-	-	-	-	998	998	-
Stage 2	-	-	-	-	-	-	611	710	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	889	-	0	0	-	-	~ 115	91	690
Stage 1	-	-	0	0	-	-	357	322	-
Stage 2	-	-	0	0	-	-	542	437	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	889	-	-	-	-	-	~ 63	0	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 63	0	-
Stage 1	-	-	-	-	-	-	~ 196	0	-
Stage 2	-	-	-	-	-	-	542	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.4	0	$ 1001.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	63	690	889	-	-	-
HCM Lane V/C Ratio	4.124	0.205	0.362	-	-	-
HCM Control Delay (s)	$ 1539.5	11.6	11.3	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	28.1	0.8	1.7	-	-	-

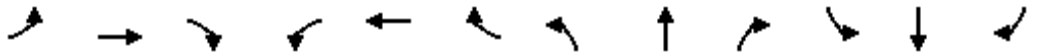
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	296	326	0	0	471	182	238	1	130	0	0	0
Future Volume (vph)	296	326	0	0	471	182	238	1	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	22.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	77.5	77.5			77.5		22.5	22.5	22.5			
Total Split (%)	77.5%	77.5%			77.5%		22.5%	22.5%	22.5%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		4.5			4.5			4.5	4.5			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None	None			

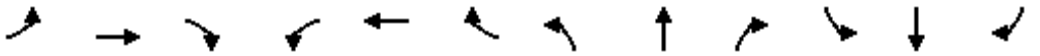
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	326	0	0	471	182	238	1	130	0	0	0
Future Volume (veh/h)	296	326	0	0	471	182	238	1	130	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	322	354	0	0	512	198	259	1	141			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	434	427	0	0	955	369	295	1	263			
Arrive On Green	1.00	1.00	0.00	0.00	1.00	1.00	0.17	0.17	0.17			
Sat Flow, veh/h	512	574	0	0	1284	497	1775	7	1585			
Grp Volume(v), veh/h	676	0	0	0	0	710	260	0	141			
Grp Sat Flow(s),veh/h/ln	1087	0	0	0	0	1781	1782	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	14.2	0.0	8.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	14.2	0.0	8.1			
Prop In Lane	0.48		0.00	0.00		0.28	1.00		1.00			
Lane Grp Cap(c), veh/h	861	0	0	0	0	1325	296	0	263			
V/C Ratio(X)	0.78	0.00	0.00	0.00	0.00	0.54	0.88	0.00	0.54			
Avail Cap(c_a), veh/h	861	0	0	0	0	1325	321	0	285			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.00	0.00	0.00	0.00	0.65	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	40.7	0.0	38.2			
Incr Delay (d2), s/veh	6.3	0.0	0.0	0.0	0.0	1.0	22.0	0.0	1.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.0	0.0	0.4	8.0	0.0	3.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.0	0.0	0.0	1.0	62.7	0.0	39.8			
LnGrp LOS	A	A	A	A	A	A	E	A	D			
Approach Vol, veh/h		676			710			401				
Approach Delay, s/veh		6.3			1.0			54.6				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		78.9				78.9		21.1				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		73.0				73.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0				2.0		16.2				
Green Ext Time (p_c), s		9.1				6.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	231	12	17	483	60	7	448	33	41	22	164
Future Volume (vph)	213	231	12	17	483	60	7	448	33	41	22	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	119.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	213	231	12	17	483	60	7	448	33	41	22	164
Future Vol, veh/h	213	231	12	17	483	60	7	448	33	41	22	164
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	224	243	13	18	508	63	7	472	35	43	23	173
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	127.1	153.6	119.8	19.8
HCM LOS	F	F	F	C

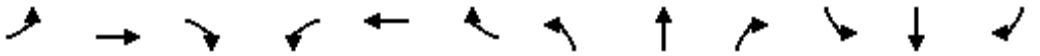
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	48%	0%	3%	0%	65%	0%
Vol Thru, %	98%	0%	52%	0%	97%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	455	33	444	12	500	60	63	164
LT Vol	7	0	213	0	17	0	41	0
Through Vol	448	0	231	0	483	0	22	0
RT Vol	0	33	0	12	0	60	0	164
Lane Flow Rate	479	35	467	13	526	63	66	173
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.159	0.077	1.162	0.028	1.274	0.14	0.185	0.432
Departure Headway (Hd)	9.653	8.907	10.026	9.036	9.633	8.879	11.552	10.456
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	378	405	365	399	384	406	312	347
Service Time	7.353	6.607	7.726	6.736	7.333	6.579	9.252	8.156
HCM Lane V/C Ratio	1.267	0.086	1.279	0.033	1.37	0.155	0.212	0.499
HCM Control Delay	127.6	12.3	130.2	12	170.5	13	16.9	20.9
HCM Lane LOS	F	B	F	B	F	B	C	C
HCM 95th-tile Q	17	0.2	16.7	0.1	21.2	0.5	0.7	2.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	231	12	17	483	60	7	448	33	41	22	164
Future Volume (vph)	213	231	12	17	483	60	7	448	33	41	22	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	18.0	56.1		9.9	48.0		34.0	34.0		34.0	34.0	
Total Split (%)	18.0%	56.1%		9.9%	48.0%		34.0%	34.0%		34.0%	34.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	231	12	17	483	60	7	448	33	41	22	164
Future Volume (veh/h)	213	231	12	17	483	60	7	448	33	41	22	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	243	13	18	508	63	7	472	35	43	23	173
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	968	52	35	710	88	306	507	38	97	56	420
Arrive On Green	0.27	1.00	1.00	0.02	0.44	0.44	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	1759	94	1781	1632	202	1187	1720	128	892	189	1425
Grp Volume(v), veh/h	224	0	256	18	0	571	7	0	507	43	0	196
Grp Sat Flow(s),veh/h/ln	1781	0	1853	1781	0	1834	1187	0	1847	892	0	1614
Q Serve(g_s), s	12.3	0.0	0.0	1.0	0.0	25.5	0.5	0.0	26.7	2.8	0.0	9.7
Cycle Q Clear(g_c), s	12.3	0.0	0.0	1.0	0.0	25.5	10.2	0.0	26.7	29.5	0.0	9.7
Prop In Lane	1.00		0.05	1.00		0.11	1.00		0.07	1.00		0.88
Lane Grp Cap(c), veh/h	240	0	1020	35	0	798	306	0	545	97	0	476
V/C Ratio(X)	0.93	0.00	0.25	0.51	0.00	0.72	0.02	0.00	0.93	0.44	0.00	0.41
Avail Cap(c_a), veh/h	240	0	1020	96	0	798	306	0	545	97	0	476
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.00	0.13	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	48.5	0.0	23.2	32.4	0.0	34.3	49.2	0.0	28.3
Incr Delay (d2), s/veh	9.1	0.0	0.1	11.2	0.0	5.4	0.0	0.0	22.8	3.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	0.6	0.0	11.8	0.1	0.0	15.1	1.2	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	0.1	59.7	0.0	28.6	32.4	0.0	57.0	52.3	0.0	28.9
LnGrp LOS	D	A	A	E	A	C	C	A	E	D	A	C
Approach Vol, veh/h		480			589			514			239	
Approach Delay, s/veh		21.1			29.6			56.7			33.1	
Approach LOS		C			C			E			C	

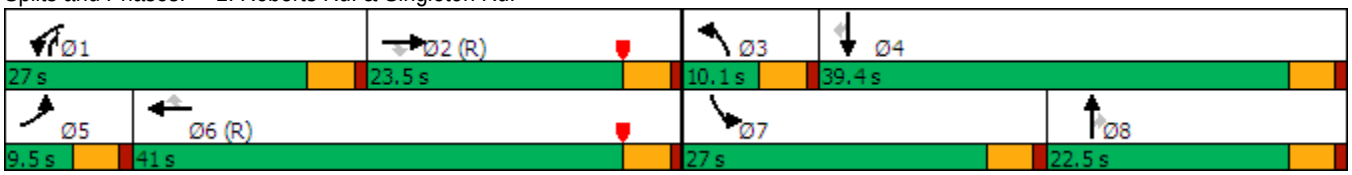
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	59.5		34.0	18.0	48.0		34.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.4	51.6		29.5	13.5	43.5		29.5				
Max Q Clear Time (g_c+I1), s	3.0	2.0		31.5	14.3	27.5		28.7				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	3.5		0.3				

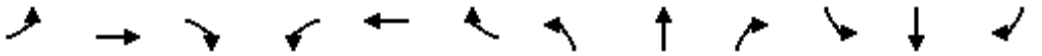
Intersection Summary			
HCM 6th Ctrl Delay		35.5	
HCM 6th LOS		D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	109	21	355	172	95	21	59	281	368	27	1
Future Volume (vph)	1	109	21	355	172	95	21	59	281	368	27	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	23.5	23.5	27.0	41.0	41.0	10.1	22.5	27.0	27.0	39.4	39.4
Total Split (%)	9.5%	23.5%	23.5%	27.0%	41.0%	41.0%	10.1%	22.5%	27.0%	27.0%	39.4%	39.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	109	21	355	172	95	21	59	281	368	27	1
Future Volume (veh/h)	1	109	21	355	172	95	21	59	281	368	27	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	118	23	386	187	103	23	64	305	400	29	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	720	321	401	1515	676	42	594	622	401	1310	584
Arrive On Green	0.00	0.20	0.20	0.38	0.71	0.71	0.02	0.17	0.17	0.22	0.37	0.37
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	1	118	23	386	187	103	23	64	305	400	29	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	2.7	1.2	21.2	1.7	2.1	1.3	1.5	14.5	22.4	0.5	0.0
Cycle Q Clear(g_c), s	0.1	2.7	1.2	21.2	1.7	2.1	1.3	1.5	14.5	22.4	0.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	720	321	401	1515	676	42	594	622	401	1310	584
V/C Ratio(X)	0.41	0.16	0.07	0.96	0.12	0.15	0.55	0.11	0.49	1.00	0.02	0.00
Avail Cap(c_a), veh/h	89	720	321	401	1515	676	100	640	642	401	1310	584
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	32.9	32.3	30.8	8.5	8.6	48.3	35.3	22.9	38.7	20.1	19.9
Incr Delay (d2), s/veh	84.1	0.5	0.4	35.3	0.2	0.5	10.6	0.1	0.6	44.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	0.5	11.5	0.7	0.8	0.7	0.7	5.4	14.6	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.0	33.4	32.7	66.1	8.7	9.0	58.9	35.4	23.5	83.1	20.1	19.9
LnGrp LOS	F	C	C	E	A	A	E	D	C	F	C	B
Approach Vol, veh/h		142			676			392			430	
Approach Delay, s/veh		34.0			41.5			27.5			78.7	
Approach LOS		C			D			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	24.8	6.9	41.4	4.6	47.1	27.0	21.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	19.0	5.6	34.9	5.0	36.5	22.5	18.0
Max Q Clear Time (g_c+I1), s	23.2	4.7	3.3	2.5	2.1	4.1	24.4	16.5
Green Ext Time (p_c), s	0.0	0.6	0.0	0.1	0.0	1.6	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	759	1	32	862	1	19
Future Volume (vph)	759	1	32	862	1	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			691	295	
Travel Time (s)	6.1			15.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

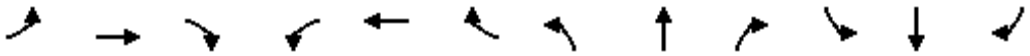
Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	759	1	32	862	1	19
Future Vol, veh/h	759	1	32	862	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	825	1	35	937	1	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	826	0	1365	413
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	800	-	139	588
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	800	-	133	588
Mov Cap-2 Maneuver	-	-	-	-	133	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	525	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	133	588	-	-	800	-
HCM Lane V/C Ratio	0.008	0.035	-	-	0.043	-
HCM Control Delay (s)	32.3	11.3	-	-	9.7	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	90	1	103	1	1	27	103	1	1
Future Volume (vph)	1	1	1	90	1	103	1	1	27	103	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

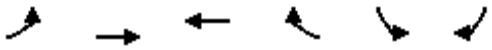
Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	90	1	103	1	1	27	103	1	1
Future Vol, veh/h	1	1	1	90	1	103	1	1	27	103	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	98	1	112	1	1	29	112	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	2	0	0	201	313	1	256	257	57
Stage 1	-	-	-	-	-	-	4	4	-	253	253	-
Stage 2	-	-	-	-	-	-	197	309	-	3	4	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1474	-	-	1619	-	-	739	601	1083	676	646	997
Stage 1	-	-	-	-	-	-	1017	892	-	729	696	-
Stage 2	-	-	-	-	-	-	786	658	-	1019	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1619	-	-	703	564	1083	626	606	997
Mov Cap-2 Maneuver	-	-	-	-	-	-	703	564	-	626	606	-
Stage 1	-	-	-	-	-	-	1016	891	-	728	654	-
Stage 2	-	-	-	-	-	-	736	618	-	990	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	3.4	8.6	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1031	1474	-	-	1619	-	-	628
HCM Lane V/C Ratio	0.031	0.001	-	-	0.06	-	-	0.182
HCM Control Delay (s)	8.6	7.4	-	-	7.4	-	-	12
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	759	589	273	0	32
Future Volume (vph)	0	759	589	273	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

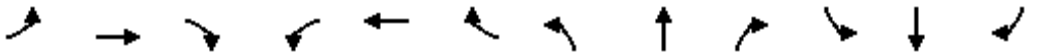
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	759	589	273	0	32
Future Vol, veh/h	0	759	589	273	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	825	640	297	0	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	469
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	541
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	541
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	541
HCM Lane V/C Ratio	-	-	-	0.064
HCM Control Delay (s)	-	-	-	12.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	104	290	1	1	104	5	48	1	5	1
Future Volume (vph)	1	1	104	290	1	1	104	5	48	1	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	13

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	104	290	1	1	104	5	48	1	5	1
Future Vol, veh/h	1	1	104	290	1	1	104	5	48	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	113	315	1	1	113	5	52	1	5	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	237	291	3	262	265	29	6	0	0	57	0	0
Stage 1	8	8	-	257	257	-	-	-	-	-	-	-
Stage 2	229	283	-	5	8	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	697	618	1080	670	639	1039	1613	-	-	1546	-	-
Stage 1	1012	889	-	725	694	-	-	-	-	-	-	-
Stage 2	753	676	-	1016	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	658	574	1080	567	594	1039	1613	-	-	1546	-	-
Mov Cap-2 Maneuver	658	574	-	567	594	-	-	-	-	-	-	-
Stage 1	941	888	-	674	645	-	-	-	-	-	-	-
Stage 2	698	629	-	908	888	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	19.1	4.9	1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1613	-	-	1065	568	1546	-	-
HCM Lane V/C Ratio	0.07	-	-	0.108	0.559	0.001	-	-
HCM Control Delay (s)	7.4	-	-	8.8	19.1	7.3	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	3.4	0	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	16	346	11	27	376
Future Volume (vph)	6	16	346	11	27	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	90				90	
Link Speed (mph)	30		30			30
Link Distance (ft)	294		522			1236
Travel Time (s)	6.7		11.9			28.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

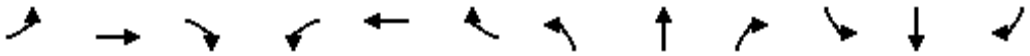
Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	16	346	11	27	376
Future Vol, veh/h	6	16	346	11	27	376
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	17	376	12	29	409

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	645	194	0	0	388	0
Stage 1	382	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	405	815	-	-	1167	-
Stage 1	660	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	395	815	-	-	1167	-
Mov Cap-2 Maneuver	395	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	738	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	632	1167	-
HCM Lane V/C Ratio	-	-	0.038	0.025	-
HCM Control Delay (s)	-	-	10.9	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1	7	6	1	16	22	330	11	27	319	37
Future Volume (vph)	11	1	7	6	1	16	22	330	11	27	319	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			351			1103			522	
Travel Time (s)		7.1			8.0			25.1			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)	10%											
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

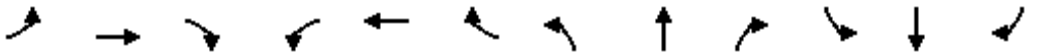
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1	7	6	1	16	22	330	11	27	319	37
Future Vol, veh/h	11	1	7	6	1	16	22	330	11	27	319	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1	8	7	1	17	24	359	12	29	347	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	653	844	194	645	858	186	387	0	0	371	0	0
Stage 1	425	425	-	413	413	-	-	-	-	-	-	-
Stage 2	228	419	-	232	445	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	352	298	815	357	293	824	1168	-	-	1184	-	-
Stage 1	578	585	-	587	592	-	-	-	-	-	-	-
Stage 2	754	588	-	750	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	332	285	815	341	280	824	1168	-	-	1184	-	-
Mov Cap-2 Maneuver	332	285	-	341	280	-	-	-	-	-	-	-
Stage 1	566	571	-	575	580	-	-	-	-	-	-	-
Stage 2	722	576	-	723	559	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	11.6	0.5	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	431	567	1184	-	-
HCM Lane V/C Ratio	0.02	-	-	0.045	0.044	0.025	-	-
HCM Control Delay (s)	8.1	-	-	13.8	11.6	8.1	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	607	236	126	700	0	0	0	0	56	1	438
Future Volume (vph)	0	607	236	126	700	0	0	0	0	56	1	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			60			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	34.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	607	236	126	700	0	0	0	0	56	1	438
Future Vol, veh/h	0	607	236	126	700	0	0	0	0	56	1	438
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	660	257	137	761	0	0	0	0	61	1	476

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	917	0	0	1824	1952	761
Stage 1	-	-	-	-	-	-	1035	1035	-
Stage 2	-	-	-	-	-	-	789	917	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	744	-	0	85	64	~ 405
Stage 1	0	-	-	-	-	0	342	309	-
Stage 2	0	-	-	-	-	0	448	351	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	744	-	-	~ 58	0	~ 405
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 58	0	-
Stage 1	-	-	-	-	-	-	342	0	-
Stage 2	-	-	-	-	-	-	305	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.7	146.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	744	-	58	405
HCM Lane V/C Ratio	-	-	0.184	-	1.068	1.176
HCM Control Delay (s)	-	-	10.9	0	255.8	132.5
HCM Lane LOS	-	-	B	A	F	F
HCM 95th %tile Q(veh)	-	-	0.7	-	5.1	18.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

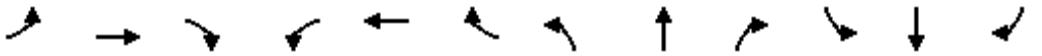
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	607	236	126	700	0	0	0	0	56	1	438
Future Volume (vph)	0	607	236	126	700	0	0	0	0	56	1	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		100
Storage Lanes	0		1	0		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases			2	6						4		4
Detector Phase		2	2	6	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	22.5	22.5					22.5	22.5	22.5
Total Split (s)		77.5	77.5	77.5	77.5					22.5	22.5	22.5
Total Split (%)		77.5%	77.5%	77.5%	77.5%					22.5%	22.5%	22.5%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5						4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max	C-Max	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	607	236	126	700	0	0	0	0	56	1	438
Future Volume (veh/h)	0	607	236	126	700	0	0	0	0	56	1	438
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	660	257	137	761	0				61	1	476
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1365	1157	183	932	0				316	5	502
Arrive On Green	0.00	0.97	0.97	1.00	1.00	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	1870	1585	193	1277	0				1754	29	2790
Grp Volume(v), veh/h	0	660	257	898	0	0				62	0	476
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1470	0	0				1783	0	1395
Q Serve(g_s), s	0.0	1.9	0.6	0.0	0.0	0.0				3.0	0.0	16.9
Cycle Q Clear(g_c), s	0.0	1.9	0.6	0.0	0.0	0.0				3.0	0.0	16.9
Prop In Lane	0.00		1.00	0.15		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1365	1157	1115	0	0				321	0	502
V/C Ratio(X)	0.00	0.48	0.22	0.81	0.00	0.00				0.19	0.00	0.95
Avail Cap(c_a), veh/h	0	1365	1157	1115	0	0				321	0	502
HCM Platoon Ratio	1.00	1.33	1.33	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.79	0.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.4	0.4	0.0	0.0	0.0				34.8	0.0	40.5
Incr Delay (d2), s/veh	0.0	1.2	0.4	5.0	0.0	0.0				1.3	0.0	29.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.3	1.5	0.0	0.0				1.4	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.6	0.8	5.0	0.0	0.0				36.2	0.0	69.6
LnGrp LOS	A	A	A	A	A	A				D	A	E
Approach Vol, veh/h		917			898						538	
Approach Delay, s/veh		1.4			5.0						65.8	
Approach LOS		A			A						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		77.5		22.5		77.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		73.0		18.0		73.0						
Max Q Clear Time (g_c+I1), s		3.9		18.9		2.0						
Green Ext Time (p_c), s		6.6		0.0		12.0						

Intersection Summary												
HCM 6th Ctrl Delay			17.5									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	325	0	0	528	174	297	1	146	0	0	0
Future Volume (vph)	338	325	0	0	528	174	297	1	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	517.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	338	325	0	0	528	174	297	1	146	0	0	0
Future Vol, veh/h	338	325	0	0	528	174	297	1	146	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	367	353	0	0	574	189	323	1	159	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	763	0	-	-	-	0	1756	1850	353
Stage 1	-	-	-	-	-	-	1087	1087	-
Stage 2	-	-	-	-	-	-	669	763	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	850	-	0	0	-	-	~ 93	74	691
Stage 1	-	-	0	0	-	-	323	292	-
Stage 2	-	-	0	0	-	-	509	413	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	850	-	-	-	-	-	~ 43	0	691
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 43	0	-
Stage 1	-	-	-	-	-	-	~ 150	0	-
Stage 2	-	-	-	-	-	-	509	0	-

Approach	EB	WB	NB
HCM Control Delay, s	6.3	0	$ 2099.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	43	691	850	-	-	-
HCM Lane V/C Ratio	7.533	0.23	0.432	-	-	-
HCM Control Delay (s)	$ 3122.1	11.8	12.4	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	38.3	0.9	2.2	-	-	-

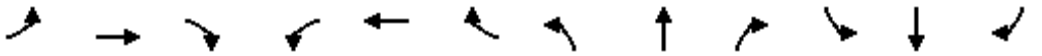
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	325	0	0	528	174	297	1	146	0	0	0
Future Volume (vph)	338	325	0	0	528	174	297	1	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	60			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2						8		8			
Detector Phase	2	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	22.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	77.5	77.5			77.5		22.5	22.5	22.5			
Total Split (%)	77.5%	77.5%			77.5%		22.5%	22.5%	22.5%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		4.5			4.5			4.5	4.5			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None	None			

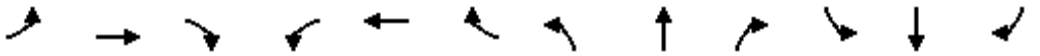
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	325	0	0	528	174	297	1	146	0	0	0
Future Volume (veh/h)	338	325	0	0	528	174	297	1	146	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	367	353	0	0	574	189	323	1	159			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	432	363	0	0	983	324	320	1	285			
Arrive On Green	1.00	1.00	0.00	0.00	1.00	1.00	0.18	0.18	0.18			
Sat Flow, veh/h	517	497	0	0	1347	444	1776	5	1585			
Grp Volume(v), veh/h	720	0	0	0	0	763	324	0	159			
Grp Sat Flow(s),veh/h/ln	1014	0	0	0	0	1791	1782	0	1585			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	18.0	0.0	9.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	18.0	0.0	9.1			
Prop In Lane	0.51		0.00	0.00		0.25	1.00		1.00			
Lane Grp Cap(c), veh/h	794	0	0	0	0	1307	321	0	285			
V/C Ratio(X)	0.91	0.00	0.00	0.00	0.00	0.58	1.01	0.00	0.56			
Avail Cap(c_a), veh/h	794	0	0	0	0	1307	321	0	285			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.00	0.00	0.00	0.00	0.78	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0	37.4			
Incr Delay (d2), s/veh	14.3	0.0	0.0	0.0	0.0	1.5	52.9	0.0	2.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.0	0.0	0.5	12.5	0.0	3.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	0.0	0.0	0.0	1.5	93.9	0.0	39.8			
LnGrp LOS	B	A	A	A	A	A	F	A	D			
Approach Vol, veh/h		720			763			483				
Approach Delay, s/veh		14.3			1.5			76.1				
Approach LOS		B			A			E				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		77.5				77.5		22.5				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		73.0				73.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0				2.0		20.0				
Green Ext Time (p_c), s		11.0				7.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	219	18	19	517	23	2	101	41	160	89	183
Future Volume (vph)	235	219	18	19	517	23	2	101	41	160	89	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.90	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	76.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	235	219	18	19	517	23	2	101	41	160	89	183
Future Vol, veh/h	235	219	18	19	517	23	2	101	41	160	89	183
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.90	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	240	223	18	19	528	23	2	112	42	163	91	187
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	82.9	129.2	15.7	21.5
HCM LOS	F	F	C	C

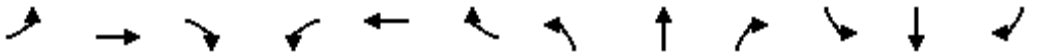
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	52%	0%	4%	0%	64%	0%
Vol Thru, %	98%	0%	48%	0%	96%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	41	454	18	536	23	249	183
LT Vol	2	0	235	0	19	0	160	0
Through Vol	101	0	219	0	517	0	89	0
RT Vol	0	41	0	18	0	23	0	183
Lane Flow Rate	114	42	463	18	547	23	254	187
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.293	0.099	1.046	0.037	1.196	0.047	0.608	0.394
Departure Headway (Hd)	9.919	9.17	8.54	7.545	8.094	7.351	9.282	8.214
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	364	393	426	477	454	490	391	441
Service Time	7.619	6.87	6.24	5.245	5.794	5.051	6.982	5.914
HCM Lane V/C Ratio	0.313	0.107	1.087	0.038	1.205	0.047	0.65	0.424
HCM Control Delay	16.7	12.9	85.8	10.5	134.3	10.4	25.4	16.2
HCM Lane LOS	C	B	F	B	F	B	D	C
HCM 95th-tile Q	1.2	0.3	14.1	0.1	20.6	0.1	3.9	1.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	219	18	19	517	23	2	101	41	160	89	183
Future Volume (vph)	235	219	18	19	517	23	2	101	41	160	89	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.89	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	25.0	62.0		10.0	47.0		28.0	28.0		28.0	28.0	
Total Split (%)	25.0%	62.0%		10.0%	47.0%		28.0%	28.0%		28.0%	28.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	219	18	19	517	23	2	101	41	160	89	183
Future Volume (veh/h)	235	219	18	19	517	23	2	101	41	160	89	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	240	223	18	19	528	23	2	103	42	163	91	187
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.89	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	1064	86	37	873	38	144	280	114	261	121	249
Arrive On Green	0.25	1.00	1.00	0.02	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	1708	138	1781	1779	77	1101	1263	515	1243	546	1122
Grp Volume(v), veh/h	240	0	241	19	0	551	2	0	145	163	0	278
Grp Sat Flow(s),veh/h/ln	1781	0	1846	1781	0	1856	1101	0	1778	1243	0	1668
Q Serve(g_s), s	13.0	0.0	0.0	1.1	0.0	21.5	0.2	0.0	6.9	12.8	0.0	15.6
Cycle Q Clear(g_c), s	13.0	0.0	0.0	1.1	0.0	21.5	15.7	0.0	6.9	19.7	0.0	15.6
Prop In Lane	1.00		0.07	1.00		0.04	1.00		0.29	1.00		0.67
Lane Grp Cap(c), veh/h	272	0	1150	37	0	911	144	0	394	261	0	370
V/C Ratio(X)	0.88	0.00	0.21	0.52	0.00	0.60	0.01	0.00	0.37	0.62	0.00	0.75
Avail Cap(c_a), veh/h	365	0	1150	98	0	911	159	0	418	278	0	392
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	0.0	0.0	48.5	0.0	18.4	43.7	0.0	33.0	41.3	0.0	36.4
Incr Delay (d2), s/veh	2.0	0.0	0.0	11.0	0.0	3.0	0.0	0.0	0.6	3.9	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	0.0	0.6	0.0	9.6	0.0	0.0	3.0	4.2	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	0.0	0.0	59.5	0.0	21.4	43.8	0.0	33.6	45.3	0.0	43.9
LnGrp LOS	D	A	A	E	A	C	D	A	C	D	A	D
Approach Vol, veh/h		481			570			147			441	
Approach Delay, s/veh		19.2			22.7			33.7			44.4	
Approach LOS		B			C			C			D	

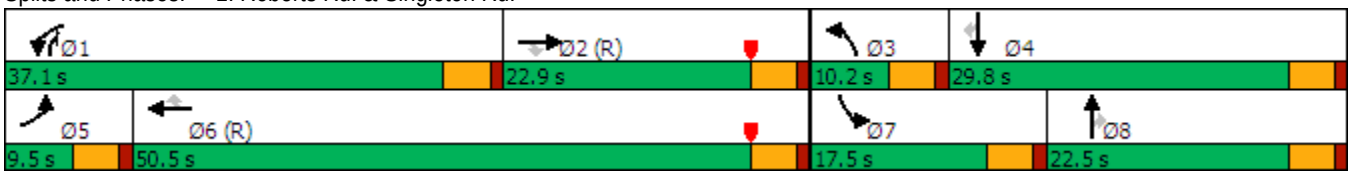
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	66.8		26.6	19.8	53.6		26.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	57.5		23.5	20.5	42.5		23.5				
Max Q Clear Time (g_c+I1), s	3.1	2.0		21.7	15.0	23.5		17.7				
Green Ext Time (p_c), s	0.0	1.6		0.4	0.3	3.5		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		28.5	
HCM 6th LOS		C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	124	11	514	127	107	24	67	414	196	15	1
Future Volume (vph)	1	124	11	514	127	107	24	67	414	196	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	22.9	22.9	37.1	50.5	50.5	10.2	22.5	37.1	17.5	29.8	29.8
Total Split (%)	9.5%	22.9%	22.9%	37.1%	50.5%	50.5%	10.2%	22.5%	37.1%	17.5%	29.8%	29.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	124	11	514	127	107	24	67	414	196	15	1
Future Volume (veh/h)	1	124	11	514	127	107	24	67	414	196	15	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	135	12	559	138	116	26	73	450	213	16	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	662	295	577	1808	806	46	640	798	232	1010	451
Arrive On Green	0.00	0.19	0.19	0.54	0.85	0.85	0.03	0.18	0.18	0.13	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	1	135	12	559	138	116	26	73	450	213	16	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	3.2	0.6	30.3	0.6	1.3	1.4	1.7	18.0	11.8	0.3	0.0
Cycle Q Clear(g_c), s	0.1	3.2	0.6	30.3	0.6	1.3	1.4	1.7	18.0	11.8	0.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	662	295	577	1808	806	46	640	798	232	1010	451
V/C Ratio(X)	0.41	0.20	0.04	0.97	0.08	0.14	0.57	0.11	0.56	0.92	0.02	0.00
Avail Cap(c_a), veh/h	89	662	295	581	1808	806	102	640	798	232	1010	451
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	34.4	33.4	22.5	3.7	3.8	48.2	34.3	17.2	43.0	25.7	25.6
Incr Delay (d2), s/veh	84.1	0.7	0.3	29.6	0.1	0.4	10.6	0.1	0.9	38.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	0.3	14.1	0.3	0.5	0.8	0.7	7.0	7.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	134.0	35.1	33.6	52.1	3.8	4.2	58.7	34.4	18.1	81.0	25.7	25.6
LnGrp LOS	F	D	C	D	A	A	E	C	B	F	C	C
Approach Vol, veh/h		148			813			549			230	
Approach Delay, s/veh		35.7			37.0			22.2			76.9	
Approach LOS		D			D			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.9	23.1	7.1	32.9	4.6	55.4	17.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.6	18.4	5.7	25.3	5.0	46.0	13.0	18.0
Max Q Clear Time (g_c+I1), s	32.3	5.2	3.4	2.3	2.1	3.3	13.8	20.0
Green Ext Time (p_c), s	0.1	0.6	0.0	0.0	0.0	1.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	735	1	98	1039	1	107
Future Volume (vph)	735	1	98	1039	1	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			90		90	
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			691	295	
Travel Time (s)	6.1			15.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	735	1	98	1039	1	107
Future Vol, veh/h	735	1	98	1039	1	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	799	1	107	1129	1	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	800	0	1579	400
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	779	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	819	-	100	600
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	87	600
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	359	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	569	-	-	819	-
HCM Lane V/C Ratio	0.206	-	-	0.13	-
HCM Control Delay (s)	13	-	-	10.1	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	34	1	117	1	1	81	55	1	1
Future Volume (vph)	1	1	1	34	1	117	1	1	81	55	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

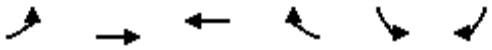
Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	34	1	117	1	1	81	55	1	1
Future Vol, veh/h	1	1	1	34	1	117	1	1	81	55	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	37	1	127	1	1	88	60	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	2	0	0	79	206	1	142	143	64
Stage 1	-	-	-	-	-	-	4	4	-	139	139	-
Stage 2	-	-	-	-	-	-	75	202	-	3	4	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1456	-	-	1619	-	-	901	690	1083	814	747	987
Stage 1	-	-	-	-	-	-	1017	892	-	850	781	-
Stage 2	-	-	-	-	-	-	926	733	-	1019	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1456	-	-	1619	-	-	883	673	1083	733	729	987
Mov Cap-2 Maneuver	-	-	-	-	-	-	883	673	-	733	729	-
Stage 1	-	-	-	-	-	-	1016	891	-	849	763	-
Stage 2	-	-	-	-	-	-	903	716	-	934	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	1.6	8.7	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1072	1456	-	-	1619	-	-	736
HCM Lane V/C Ratio	0.084	0.001	-	-	0.023	-	-	0.084
HCM Control Delay (s)	8.7	7.5	-	-	7.3	-	-	10.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	735	731	308	0	17
Future Volume (vph)	0	735	731	308	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

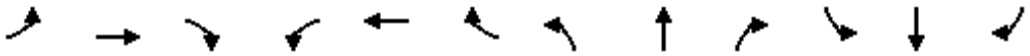
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	735	731	308	0	17
Future Vol, veh/h	0	735	731	308	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	799	795	335	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	565
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	468
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	468
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	468
HCM Lane V/C Ratio	-	-	-	0.039
HCM Control Delay (s)	-	-	-	13
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	55	153	1	1	117	6	54	1	6	1
Future Volume (vph)	1	1	55	153	1	1	117	6	54	1	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	55	153	1	1	117	6	54	1	6	1
Future Vol, veh/h	1	1	55	153	1	1	117	6	54	1	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	60	166	1	1	127	7	59	1	7	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	268	330	4	297	301	33	8	0	0	66	0	0
Stage 1	10	10	-	291	291	-	-	-	-	-	-	-
Stage 2	258	320	-	6	10	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	663	588	1078	633	610	1033	1611	-	-	1534	-	-
Stage 1	1009	887	-	693	670	-	-	-	-	-	-	-
Stage 2	724	651	-	1015	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	621	541	1078	561	561	1033	1611	-	-	1534	-	-
Mov Cap-2 Maneuver	621	541	-	561	561	-	-	-	-	-	-	-
Stage 1	929	886	-	638	617	-	-	-	-	-	-	-
Stage 2	665	600	-	957	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	14.1	4.9	0.9
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	1046	563	1534	-	-
HCM Lane V/C Ratio	0.079	-	-	0.059	0.299	0.001	-	-
HCM Control Delay (s)	7.4	-	-	8.7	14.1	7.3	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	1.2	0	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	90	418	33	82	459
Future Volume (vph)	36	90	418	33	82	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	90				90	
Link Speed (mph)	30		30			30
Link Distance (ft)	294		522			1236
Travel Time (s)	6.7		11.9			28.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

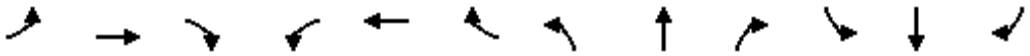
Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	90	418	33	82	459
Future Vol, veh/h	36	90	418	33	82	459
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	98	454	36	89	499

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	900	245	0	0	490	0
Stage 1	472	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	278	755	-	-	1070	-
Stage 1	594	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	255	755	-	-	1070	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	1070	-
HCM Lane V/C Ratio	-	-	0.283	0.083	-
HCM Control Delay (s)	-	-	15.3	8.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1	20	36	1	90	8	328	33	82	399	14
Future Volume (vph)	33	1	20	36	1	90	8	328	33	82	399	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			351			1103			522	
Travel Time (s)		7.1			8.0			25.1			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)	10%											
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	1	20	36	1	90	8	328	33	82	399	14
Future Vol, veh/h	33	1	20	36	1	90	8	328	33	82	399	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	1	22	39	1	98	9	357	36	89	434	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	817	1031	225	789	1020	197	449	0	0	393	0	0
Stage 1	620	620	-	393	393	-	-	-	-	-	-	-
Stage 2	197	411	-	396	627	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	268	232	778	281	235	811	1108	-	-	1162	-	-
Stage 1	442	478	-	603	604	-	-	-	-	-	-	-
Stage 2	786	593	-	601	474	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	220	213	778	255	215	811	1108	-	-	1162	-	-
Mov Cap-2 Maneuver	220	213	-	255	215	-	-	-	-	-	-	-
Stage 1	438	441	-	598	599	-	-	-	-	-	-	-
Stage 2	684	588	-	538	438	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.7	15.1	0.2	1.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	302	495	1162	-	-
HCM Lane V/C Ratio	0.008	-	-	0.191	0.279	0.077	-	-
HCM Control Delay (s)	8.3	-	-	19.7	15.1	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.1	0.2	-	-

ATTACHMENT 4:

PHASE 4 (2030) WITHOUT AND WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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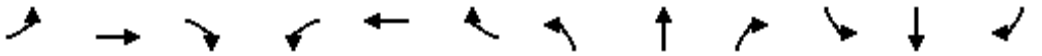


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	668	249	180	391	0	0	0	0	38	1	90
Future Volume (vph)	0	668	249	180	391	0	0	0	0	38	1	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	668	249	180	391	0	0	0	0	38	1	90
Future Vol, veh/h	0	668	249	180	391	0	0	0	0	38	1	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	726	271	196	425	0	0	0	0	41	1	98

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	997	0	0			1679	1814	425
Stage 1	-	-	-	-	-	-			817	817	-
Stage 2	-	-	-	-	-	-			862	997	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	694	-	0			104	78	629
Stage 1	0	-	-	-	-	0			434	390	-
Stage 2	0	-	-	-	-	0			414	322	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	694	-	-			66	0	629
Mov Cap-2 Maneuver	-	-	-	-	-	-			66	0	-
Stage 1	-	-	-	-	-	-			434	0	-
Stage 2	-	-	-	-	-	-			261	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.8	47
HCM LOS			E

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	694	-	66	629
HCM Lane V/C Ratio	-	-	0.282	-	0.642	0.156
HCM Control Delay (s)	-	-	12.2	0	128.2	11.8
HCM Lane LOS	-	-	B	A	F	B
HCM 95th %tile Q(veh)	-	-	1.2	-	2.8	0.5

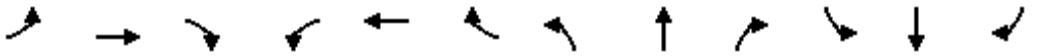
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	668	249	180	391	0	0	0	0	38	1	90
Future Volume (vph)	0	668	249	180	391	0	0	0	0	38	1	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		200
Storage Lanes	0		1	1		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	9.5	22.5					22.5	22.5	22.5
Total Split (s)		45.0	45.0	31.0	76.0					24.0	24.0	24.0
Total Split (%)		45.0%	45.0%	31.0%	76.0%					24.0%	24.0%	24.0%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps

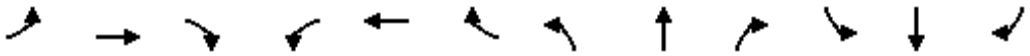




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	668	249	180	391	0	0	0	0	38	1	90
Future Volume (veh/h)	0	668	249	180	391	0	0	0	0	38	1	90
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	726	271	196	425	0				41	1	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1924	858	229	2541	0				339	8	544
Arrive On Green	0.00	0.54	0.54	0.26	1.00	0.00				0.19	0.19	0.19
Sat Flow, veh/h	0	3647	1585	1781	3647	0				1741	42	2790
Grp Volume(v), veh/h	0	726	271	196	425	0				42	0	98
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1781	1777	0				1783	0	1395
Q Serve(g_s), s	0.0	11.8	9.5	10.5	0.0	0.0				1.9	0.0	2.9
Cycle Q Clear(g_c), s	0.0	11.8	9.5	10.5	0.0	0.0				1.9	0.0	2.9
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1924	858	229	2541	0				348	0	544
V/C Ratio(X)	0.00	0.38	0.32	0.86	0.17	0.00				0.12	0.00	0.18
Avail Cap(c_a), veh/h	0	1924	858	472	2541	0				348	0	544
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.2	12.7	36.2	0.0	0.0				33.2	0.0	33.6
Incr Delay (d2), s/veh	0.0	0.6	1.0	8.4	0.1	0.0				0.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	3.5	4.5	0.0	0.0				0.9	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.8	13.7	44.6	0.1	0.0				33.9	0.0	34.3
LnGrp LOS	A	B	B	D	A	A				C	A	C
Approach Vol, veh/h		997			621						140	
Approach Delay, s/veh		13.7			14.2						34.2	
Approach LOS		B			B						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.4	58.6		24.0		76.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	26.5	40.5		19.5		71.5
Max Q Clear Time (g_c+I1), s	12.5	13.8		4.9		2.0
Green Ext Time (p_c), s	0.4	6.6		0.4		3.2

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	445	0	0	481	197	89	1	141	0	0	0
Future Volume (vph)	260	445	0	0	481	197	89	1	141	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	30.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	260	445	0	0	481	197	89	1	141	0	0	0
Future Vol, veh/h	260	445	0	0	481	197	89	1	141	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	283	484	0	0	523	214	97	1	153	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	737	0	-	-	-	0	1680	1787	484
Stage 1	-	-	-	-	-	-	1050	1050	-
Stage 2	-	-	-	-	-	-	630	737	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	869	-	0	0	-	-	104	81	583
Stage 1	-	-	0	0	-	-	337	304	-
Stage 2	-	-	0	0	-	-	531	425	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	869	-	-	-	-	-	~ 58	0	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 58	0	-
Stage 1	-	-	-	-	-	-	187	0	-
Stage 2	-	-	-	-	-	-	531	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.1	0	198.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	58	583	869	-	-	-
HCM Lane V/C Ratio	1.687	0.263	0.325	-	-	-
HCM Control Delay (s)	$ 488	13.4	11.1	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	9	1	1.4	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

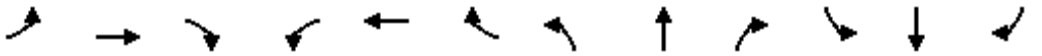
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	445	0	0	481	197	89	1	141	0	0	0
Future Volume (vph)	260	445	0	0	481	197	89	1	141	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	200		100	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	120			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							10%		47%			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	9.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	25.0	73.0			48.0		27.0	27.0	27.0			
Total Split (%)	25.0%	73.0%			48.0%		27.0%	27.0%	27.0%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.5	4.5	4.5			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps

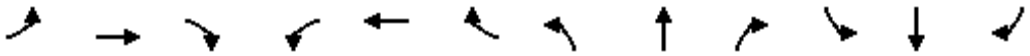




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	445	0	0	481	197	89	1	141	0	0	0
Future Volume (veh/h)	260	445	0	0	481	197	89	1	141	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	283	484	0	0	523	214	65	0	188			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	362	2931	0	0	1663	678	152	0	270			
Arrive On Green	0.21	1.00	0.00	0.00	1.00	1.00	0.09	0.00	0.09			
Sat Flow, veh/h	3456	3647	0	0	2556	1004	1781	0	3170			
Grp Volume(v), veh/h	283	484	0	0	377	360	65	0	188			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1690	1781	0	1585			
Q Serve(g_s), s	7.7	0.0	0.0	0.0	0.0	0.0	3.5	0.0	5.8			
Cycle Q Clear(g_c), s	7.7	0.0	0.0	0.0	0.0	0.0	3.5	0.0	5.8			
Prop In Lane	1.00		0.00	0.00		0.59	1.00		1.00			
Lane Grp Cap(c), veh/h	362	2931	0	0	1200	1141	152	0	270			
V/C Ratio(X)	0.78	0.17	0.00	0.00	0.31	0.32	0.43	0.00	0.70			
Avail Cap(c_a), veh/h	708	2931	0	0	1200	1141	401	0	713			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	0.82	0.82	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.5	0.0	0.0	0.0	0.0	0.0	43.4	0.0	44.5			
Incr Delay (d2), s/veh	3.4	0.1	0.0	0.0	0.6	0.6	1.9	0.0	3.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	0.0	0.2	0.2	1.6	0.0	2.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	0.1	0.0	0.0	0.6	0.6	45.3	0.0	47.7			
LnGrp LOS	D	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		767			737			253				
Approach Delay, s/veh		15.5			0.6			47.1				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		87.0			15.0	72.0		13.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		68.5			20.5	43.5		22.5				
Max Q Clear Time (g_c+I1), s		2.0			9.7	2.0		7.8				
Green Ext Time (p_c), s		3.7			0.7	5.5		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			13.8									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	295	14	18	508	65	8	485	36	44	24	162
Future Volume (vph)	278	295	14	18	508	65	8	485	36	44	24	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	181.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	278	295	14	18	508	65	8	485	36	44	24	162
Future Vol, veh/h	278	295	14	18	508	65	8	485	36	44	24	162
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	293	311	15	19	535	68	8	511	38	46	25	171
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

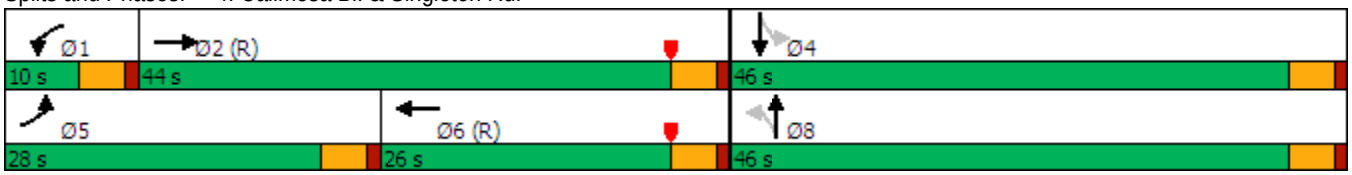
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	264.3	182.9	158.6	21.3
HCM LOS	F	F	F	C

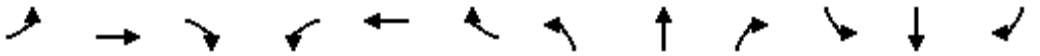
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	49%	0%	3%	0%	65%	0%
Vol Thru, %	98%	0%	51%	0%	97%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	493	36	573	14	526	65	68	162
LT Vol	8	0	278	0	18	0	44	0
Through Vol	485	0	295	0	508	0	24	0
RT Vol	0	36	0	14	0	65	0	162
Lane Flow Rate	519	38	603	15	554	68	72	171
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.264	0.085	1.511	0.033	1.349	0.153	0.198	0.423
Departure Headway (Hd)	10.278	9.526	10.39	9.393	10.531	9.769	12.703	11.599
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	358	379	356	383	349	369	284	314
Service Time	7.978	7.226	8.09	7.093	8.231	7.469	10.403	9.299
HCM Lane V/C Ratio	1.45	0.1	1.694	0.039	1.587	0.184	0.254	0.545
HCM Control Delay	169.2	13.1	270.5	12.4	203.8	14.2	18.5	22.5
HCM Lane LOS	F	B	F	B	F	B	C	C
HCM 95th-tile Q	19.9	0.3	28.9	0.1	22.6	0.5	0.7	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	295	14	18	508	65	8	485	36	44	24	162
Future Volume (vph)	278	295	14	18	508	65	8	485	36	44	24	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		100	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	28.0	44.0		10.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	28.0%	44.0%		10.0%	26.0%		46.0%	46.0%		46.0%	46.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	295	14	18	508	65	8	485	36	44	24	162
Future Volume (veh/h)	278	295	14	18	508	65	8	485	36	44	24	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	311	15	19	535	68	8	511	38	46	25	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	1696	81	37	1050	133	385	607	45	140	73	498
Arrive On Green	0.36	0.98	0.98	0.02	0.33	0.33	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3451	166	1781	3173	402	1187	1719	128	858	206	1410
Grp Volume(v), veh/h	293	160	166	19	299	304	8	0	549	46	0	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1798	1187	0	1847	858	0	1617
Q Serve(g_s), s	15.6	0.2	0.2	1.1	13.5	13.6	0.5	0.0	27.3	5.2	0.0	8.9
Cycle Q Clear(g_c), s	15.6	0.2	0.2	1.1	13.5	13.6	9.4	0.0	27.3	32.6	0.0	8.9
Prop In Lane	1.00		0.09	1.00		0.22	1.00		0.07	1.00		0.87
Lane Grp Cap(c), veh/h	322	873	904	37	588	595	385	0	652	140	0	571
V/C Ratio(X)	0.91	0.18	0.18	0.52	0.51	0.51	0.02	0.00	0.84	0.33	0.00	0.34
Avail Cap(c_a), veh/h	419	873	904	98	588	595	459	0	767	193	0	671
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	0.4	0.4	48.5	26.9	26.9	27.3	0.0	29.8	44.7	0.0	23.8
Incr Delay (d2), s/veh	19.8	0.5	0.4	11.0	3.1	3.1	0.0	0.0	7.4	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.2	0.2	0.6	6.2	6.3	0.1	0.0	13.1	1.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.9	0.9	0.9	59.5	30.0	30.1	27.3	0.0	37.1	46.1	0.0	24.2
LnGrp LOS	D	A	A	E	C	C	C	A	D	D	A	C
Approach Vol, veh/h		619			622			557			242	
Approach Delay, s/veh		24.6			30.9			37.0			28.3	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	53.6		39.8	22.6	37.6		39.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	39.5		41.5	23.5	21.5		41.5				
Max Q Clear Time (g_c+I1), s	3.1	2.2		34.6	17.6	15.6		29.3				
Green Ext Time (p_c), s	0.0	2.0		0.8	0.5	1.9		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			30.3									
HCM 6th LOS			C									



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	92	12	253	265	34
Future Volume (vph)	250	92	12	253	265	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	40.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	250	92	12	253	265	34
Future Vol, veh/h	250	92	12	253	265	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	100	13	275	288	37

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	764	151	0	0	288	0
Stage 1	151	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	372	895	-	-	1274	-
Stage 1	877	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	895	-	-	1274	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	416	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	100.8	0	7.7
HCM LOS	F		

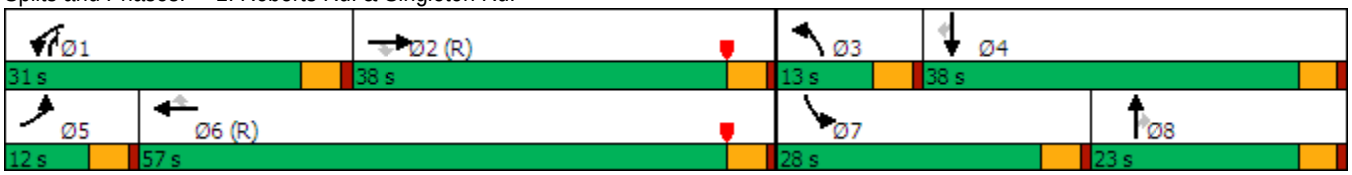
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	350	1274	-
HCM Lane V/C Ratio	-	-	1.062	0.226	-
HCM Control Delay (s)	-	-	100.8	8.6	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	13.2	0.9	-

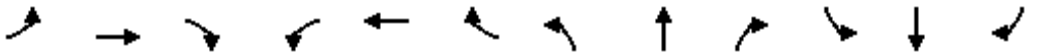
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	396	50	250	137	92	17	12	253	265	34	33
Future Volume (vph)	11	396	50	250	137	92	17	12	253	265	34	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	12.0	38.0	38.0	31.0	57.0	57.0	13.0	23.0	31.0	28.0	38.0	38.0
Total Split (%)	10.0%	31.7%	31.7%	25.8%	47.5%	47.5%	10.8%	19.2%	25.8%	23.3%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 49 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Roberts Rd. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	396	50	250	137	92	17	12	253	265	34	33
Future Volume (veh/h)	11	396	50	250	137	92	17	12	253	265	34	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	430	54	272	149	100	18	13	275	288	37	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	1745	778	346	2053	916	33	548	403	361	852	380
Arrive On Green	0.01	0.49	0.49	0.10	0.58	0.58	0.02	0.15	0.15	0.10	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	12	430	54	272	149	100	18	13	275	288	37	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.8	8.4	2.2	9.2	2.2	3.4	1.2	0.4	18.5	9.8	1.0	2.1
Cycle Q Clear(g_c), s	0.8	8.4	2.2	9.2	2.2	3.4	1.2	0.4	18.5	9.8	1.0	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	1745	778	346	2053	916	33	548	403	361	852	380
V/C Ratio(X)	0.49	0.25	0.07	0.79	0.07	0.11	0.54	0.02	0.68	0.80	0.04	0.09
Avail Cap(c_a), veh/h	111	1745	778	763	2053	916	126	548	403	677	992	442
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	17.7	16.1	52.7	11.2	11.4	58.4	43.1	40.4	52.5	35.0	35.5
Incr Delay (d2), s/veh	14.4	0.3	0.2	3.9	0.1	0.2	12.7	0.0	4.6	4.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.5	0.8	4.2	0.9	1.3	0.7	0.2	7.8	4.4	0.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	18.0	16.3	56.7	11.2	11.7	71.1	43.1	45.0	56.6	35.1	35.6
LnGrp LOS	E	B	B	E	B	B	E	D	D	E	D	D
Approach Vol, veh/h		496			521			306			361	
Approach Delay, s/veh		19.2			35.0			46.5			52.3	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	63.4	6.8	33.3	6.1	73.8	17.0	23.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	33.5	8.5	33.5	7.5	52.5	23.5	18.5
Max Q Clear Time (g_c+I1), s	11.2	10.4	3.2	4.1	2.8	5.4	11.8	20.5
Green Ext Time (p_c), s	0.8	3.1	0.0	0.3	0.0	1.3	0.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	491	172	136	795	0	0	0	0	61	1	292
Future Volume (vph)	0	491	172	136	795	0	0	0	0	61	1	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	150		0	0		0	0		100
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		651			661			1037			787	
Travel Time (s)		14.8			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	18.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	491	172	136	795	0	0	0	0	61	1	292
Future Vol, veh/h	0	491	172	136	795	0	0	0	0	61	1	292
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	534	187	148	864	0	0	0	0	66	1	317

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	721	0	0			1788	1881	864
Stage 1	-	-	-	-	-	-			1160	1160	-
Stage 2	-	-	-	-	-	-			628	721	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	881	-	0			89	71	354
Stage 1	0	-	-	-	-	0			298	270	-
Stage 2	0	-	-	-	-	0			532	432	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	881	-	-			~ 60	0	354
Mov Cap-2 Maneuver	-	-	-	-	-	-			~ 60	0	-
Stage 1	-	-	-	-	-	-			298	0	-
Stage 2	-	-	-	-	-	-			360	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.4	96.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	881	-	60	354
HCM Lane V/C Ratio	-	-	0.168	-	1.123	0.897
HCM Control Delay (s)	-	-	9.9	0	269.1	60.1
HCM Lane LOS	-	-	A	A	F	F
HCM 95th %tile Q(veh)	-	-	0.6	-	5.5	8.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

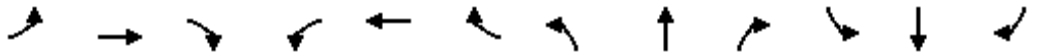
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	491	172	136	795	0	0	0	0	61	1	292
Future Volume (vph)	0	491	172	136	795	0	0	0	0	61	1	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		200
Storage Lanes	0		1	1		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	9.5	22.5					22.5	22.5	22.5
Total Split (s)		42.0	42.0	29.0	71.0					29.0	29.0	29.0
Total Split (%)		42.0%	42.0%	29.0%	71.0%					29.0%	29.0%	29.0%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	491	172	136	795	0	0	0	0	61	1	292
Future Volume (veh/h)	0	491	172	136	795	0	0	0	0	61	1	292
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	534	187	148	864	0				66	1	317
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1844	823	180	2363	0				430	7	683
Arrive On Green	0.00	0.52	0.52	0.20	1.00	0.00				0.25	0.25	0.25
Sat Flow, veh/h	0	3647	1585	1781	3647	0				1756	27	2790
Grp Volume(v), veh/h	0	534	187	148	864	0				67	0	317
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1781	1777	0				1783	0	1395
Q Serve(g_s), s	0.0	8.5	6.4	8.0	0.0	0.0				2.9	0.0	9.7
Cycle Q Clear(g_c), s	0.0	8.5	6.4	8.0	0.0	0.0				2.9	0.0	9.7
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1844	823	180	2363	0				437	0	683
V/C Ratio(X)	0.00	0.29	0.23	0.82	0.37	0.00				0.15	0.00	0.46
Avail Cap(c_a), veh/h	0	1844	823	436	2363	0				437	0	683
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.88	0.88	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.6	13.1	39.0	0.0	0.0				29.6	0.0	32.2
Incr Delay (d2), s/veh	0.0	0.4	0.6	8.0	0.4	0.0				0.7	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	2.4	3.5	0.1	0.0				1.3	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.0	13.8	47.1	0.4	0.0				30.4	0.0	34.4
LnGrp LOS	A	B	B	D	A	A				C	A	C
Approach Vol, veh/h		721			1012						384	
Approach Delay, s/veh		13.9			7.2						33.7	
Approach LOS		B			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.6	56.4		29.0		71.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	24.5	37.5		24.5		66.5
Max Q Clear Time (g_c+I1), s	10.0	10.5		11.7		2.0
Green Ext Time (p_c), s	0.3	4.5		1.3		7.7

Intersection Summary			
HCM 6th Ctrl Delay		14.3	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	377	0	0	649	188	282	1	158	0	0	0
Future Volume (vph)	175	377	0	0	649	188	282	1	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	100		100	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	220.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	377	0	0	649	188	282	1	158	0	0	0
Future Vol, veh/h	175	377	0	0	649	188	282	1	158	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	190	410	0	0	705	204	307	1	172	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	909	0	-	-	-	0	1597	1699	410
Stage 1	-	-	-	-	-	-	790	790	-
Stage 2	-	-	-	-	-	-	807	909	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	749	-	0	0	-	-	~ 117	92	642
Stage 1	-	-	0	0	-	-	447	402	-
Stage 2	-	-	0	0	-	-	439	354	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	749	-	-	-	-	-	~ 79	0	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 79	0	-
Stage 1	-	-	-	-	-	-	~ 300	0	-
Stage 2	-	-	-	-	-	-	439	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.6	0	$ 910.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	79	642	749	-	-	-
HCM Lane V/C Ratio	3.894	0.268	0.254	-	-	-
HCM Control Delay (s)	$ 1411.4	12.6	11.4	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	32.2	1.1	1	-	-	-

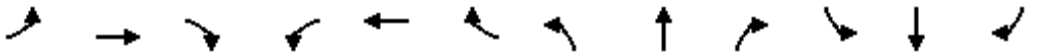
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	377	0	0	649	188	282	1	158	0	0	0
Future Volume (vph)	175	377	0	0	649	188	282	1	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	200		100	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	120			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							46%		13%			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	9.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	18.0	71.0			53.0		29.0	29.0	29.0			
Total Split (%)	18.0%	71.0%			53.0%		29.0%	29.0%	29.0%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.5	4.5	4.5			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps

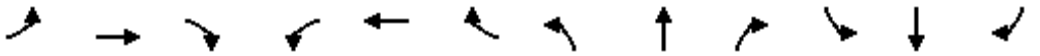




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	377	0	0	649	188	282	1	158	0	0	0
Future Volume (veh/h)	175	377	0	0	649	188	282	1	158	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	190	410	0	0	705	204	361	0	115			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	260	2765	0	0	1789	517	470	0	209			
Arrive On Green	0.15	1.00	0.00	0.00	1.00	1.00	0.13	0.00	0.13			
Sat Flow, veh/h	3456	3647	0	0	2813	787	3563	0	1585			
Grp Volume(v), veh/h	190	410	0	0	461	448	361	0	115			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1729	1781	0	1585			
Q Serve(g_s), s	5.2	0.0	0.0	0.0	0.0	0.0	9.8	0.0	6.8			
Cycle Q Clear(g_c), s	5.2	0.0	0.0	0.0	0.0	0.0	9.8	0.0	6.8			
Prop In Lane	1.00		0.00	0.00		0.46	1.00		1.00			
Lane Grp Cap(c), veh/h	260	2765	0	0	1169	1137	470	0	209			
V/C Ratio(X)	0.73	0.15	0.00	0.00	0.39	0.39	0.77	0.00	0.55			
Avail Cap(c_a), veh/h	467	2765	0	0	1169	1137	873	0	388			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.96	0.96	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.5	0.0	0.0	0.0	0.0	0.0	41.9	0.0	40.6			
Incr Delay (d2), s/veh	3.8	0.1	0.0	0.0	0.9	0.9	2.7	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	0.0	0.3	0.3	4.4	0.0	2.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.1	0.0	0.0	0.9	0.9	44.6	0.0	42.9			
LnGrp LOS	D	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		600			909			476				
Approach Delay, s/veh		14.4			0.9			44.2				
Approach LOS		B			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		82.3			12.0	70.3		17.7				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		66.5			13.5	48.5		24.5				
Max Q Clear Time (g_c+I1), s		2.0			7.2	2.0		11.8				
Green Ext Time (p_c), s		3.1			0.3	7.4		1.4				
Intersection Summary												
HCM 6th Ctrl Delay			15.4									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	249	19	20	599	25	2	109	44	173	97	237
Future Volume (vph)	267	249	19	20	599	25	2	109	44	173	97	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	123.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	267	249	19	20	599	25	2	109	44	173	97	237
Future Vol, veh/h	267	249	19	20	599	25	2	109	44	173	97	237
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	272	254	19	20	611	26	2	111	45	177	99	242
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	139.3	212.9	16.8	25.6
HCM LOS	F	F	C	D

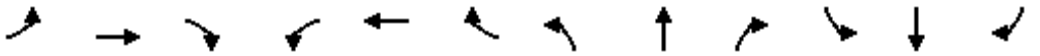
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	52%	0%	3%	0%	64%	0%
Vol Thru, %	98%	0%	48%	0%	97%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	44	516	19	619	25	270	237
LT Vol	2	0	267	0	20	0	173	0
Through Vol	109	0	249	0	599	0	97	0
RT Vol	0	44	0	19	0	25	0	237
Lane Flow Rate	113	45	527	19	632	26	276	242
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.294	0.108	1.211	0.039	1.409	0.052	0.666	0.516
Departure Headway (Hd)	10.797	10.041	9.045	8.044	8.532	7.787	9.842	8.767
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	335	359	405	448	430	463	369	414
Service Time	8.497	7.741	6.745	5.744	6.232	5.487	7.542	6.467
HCM Lane V/C Ratio	0.337	0.125	1.301	0.042	1.47	0.056	0.748	0.585
HCM Control Delay	17.9	14	144	11.1	221.1	10.9	30.1	20.4
HCM Lane LOS	C	B	F	B	F	B	D	C
HCM 95th-tile Q	1.2	0.4	19.7	0.1	29.2	0.2	4.6	2.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	249	19	20	599	25	2	109	44	173	97	237
Future Volume (vph)	267	249	19	20	599	25	2	109	44	173	97	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		100	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	32.0	56.0		10.0	34.0		34.0	34.0		34.0	34.0	
Total Split (%)	32.0%	56.0%		10.0%	34.0%		34.0%	34.0%		34.0%	34.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	249	19	20	599	25	2	109	44	173	97	237
Future Volume (veh/h)	267	249	19	20	599	25	2	109	44	173	97	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	272	254	19	20	611	26	2	111	45	177	99	242
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	2002	149	38	1550	66	126	312	127	286	119	290
Arrive On Green	0.29	1.00	1.00	0.02	0.45	0.45	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3353	249	1781	3473	148	1039	1265	513	1231	482	1177
Grp Volume(v), veh/h	272	134	139	20	312	325	2	0	156	177	0	341
Grp Sat Flow(s),veh/h/ln	1781	1777	1826	1781	1777	1844	1039	0	1778	1231	0	1659
Q Serve(g_s), s	14.6	0.0	0.0	1.1	11.8	11.8	0.2	0.0	7.2	13.9	0.0	19.5
Cycle Q Clear(g_c), s	14.6	0.0	0.0	1.1	11.8	11.8	19.7	0.0	7.2	21.1	0.0	19.5
Prop In Lane	1.00		0.14	1.00		0.08	1.00		0.29	1.00		0.71
Lane Grp Cap(c), veh/h	306	1061	1090	38	793	823	126	0	439	286	0	409
V/C Ratio(X)	0.89	0.13	0.13	0.53	0.39	0.39	0.02	0.00	0.36	0.62	0.00	0.83
Avail Cap(c_a), veh/h	490	1061	1090	98	793	823	176	0	525	346	0	489
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	0.1	0.1	48.4	18.6	18.6	45.0	0.0	31.1	39.8	0.0	35.7
Incr Delay (d2), s/veh	11.3	0.2	0.2	10.9	1.5	1.4	0.0	0.0	0.5	2.4	0.0	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.1	0.1	0.6	5.1	5.2	0.0	0.0	3.1	4.3	0.0	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.3	0.3	59.3	20.1	20.0	45.1	0.0	31.6	42.2	0.0	45.9
LnGrp LOS	D	A	A	E	C	C	D	A	C	D	A	D
Approach Vol, veh/h		545			657			158			518	
Approach Delay, s/veh		23.1			21.2			31.8			44.6	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	64.2		29.2	21.7	49.1		29.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	51.5		29.5	27.5	29.5		29.5				
Max Q Clear Time (g_c+I1), s	3.1	2.0		23.1	16.6	13.8		21.7				
Green Ext Time (p_c), s	0.0	1.7		1.6	0.6	3.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		29.1	
HCM 6th LOS		C	



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	342	299	38	216	180	23
Future Volume (vph)	342	299	38	216	180	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	651		962			351
Travel Time (s)	14.8		21.9			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	97.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	342	299	38	216	180	23
Future Vol, veh/h	342	299	38	216	180	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	372	325	41	235	196	25

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	576	159	0	0	276	0
Stage 1	159	-	-	-	-	-
Stage 2	417	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	479	886	-	-	1287	-
Stage 1	870	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	405	886	-	-	1287	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	165.1	0	7.4
HCM LOS	F		

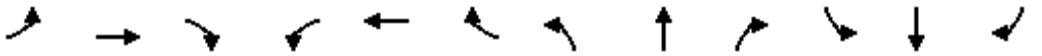
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	542	1287	-
HCM Lane V/C Ratio	-	-	1.285	0.152	-
HCM Control Delay (s)	-	-	165.1	8.3	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	28.5	0.5	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	266	33	342	446	299	56	38	216	180	23	22
Future Volume (vph)	37	266	33	342	446	299	56	38	216	180	23	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	17.0	35.0	35.0	36.0	54.0	54.0	21.0	24.0	36.0	25.0	28.0	28.0
Total Split (%)	14.2%	29.2%	29.2%	30.0%	45.0%	45.0%	17.5%	20.0%	30.0%	20.8%	23.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 49 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	266	33	342	446	299	56	38	216	180	23	22
Future Volume (veh/h)	37	266	33	342	446	299	56	38	216	180	23	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	289	36	372	485	325	61	41	235	196	25	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1769	789	454	2127	949	79	514	438	263	627	279
Arrive On Green	0.03	0.50	0.50	0.13	0.60	0.60	0.04	0.14	0.14	0.08	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	40	289	36	372	485	325	61	41	235	196	25	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.7	5.3	1.4	12.6	7.6	12.4	4.1	1.2	15.1	6.7	0.7	1.5
Cycle Q Clear(g_c), s	2.7	5.3	1.4	12.6	7.6	12.4	4.1	1.2	15.1	6.7	0.7	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	1769	789	454	2127	949	79	514	438	263	627	279
V/C Ratio(X)	0.73	0.16	0.05	0.82	0.23	0.34	0.77	0.08	0.54	0.75	0.04	0.09
Avail Cap(c_a), veh/h	186	1769	789	907	2127	949	245	577	466	590	696	310
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	16.5	15.5	50.7	11.2	12.2	56.7	44.4	36.9	54.3	41.0	41.3
Incr Delay (d2), s/veh	17.0	0.2	0.1	3.7	0.2	1.0	14.5	0.1	1.1	4.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.2	0.5	5.7	3.0	4.5	2.1	0.5	6.0	3.1	0.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.7	16.7	15.6	54.4	11.4	13.2	71.2	44.5	38.0	58.5	41.0	41.5
LnGrp LOS	E	B	B	D	B	B	E	D	D	E	D	D
Approach Vol, veh/h		365			1182			337			245	
Approach Delay, s/veh		22.9			25.4			44.8			55.0	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	64.2	9.8	25.7	8.2	76.3	13.6	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	30.5	16.5	23.5	12.5	49.5	20.5	19.5
Max Q Clear Time (g_c+I1), s	14.6	7.3	6.1	3.5	4.7	14.4	8.7	17.1
Green Ext Time (p_c), s	1.2	2.0	0.1	0.1	0.0	4.9	0.5	0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1033	480	180	748	0	0	0	0	38	1	521
Future Volume (vph)	0	1033	480	180	748	0	0	0	0	38	1	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour 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
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	50.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1033	480	180	748	0	0	0	0	38	1	521
Future Vol, veh/h	0	1033	480	180	748	0	0	0	0	38	1	521
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1033	480	180	748	0	0	0	0	38	1	521

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	1513	0	0	2381	2621	748
Stage 1	-	-	-	-	-	-	1108	1108	-
Stage 2	-	-	-	-	-	-	1273	1513	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	442	-	0	38	24	~ 412
Stage 1	0	-	-	-	-	0	316	286	-
Stage 2	0	-	-	-	-	0	263	182	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	442	-	-	~ 12	0	~ 412
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 12	0	-
Stage 1	-	-	-	-	-	-	316	0	-
Stage 2	-	-	-	-	-	-	80	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.6	264.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	442	-	12	412
HCM Lane V/C Ratio	-	-	0.407	-	3.167	1.267
HCM Control Delay (s)	-	-	18.6	$	1608.1	166.5
HCM Lane LOS	-	-	C	A	F	F
HCM 95th %tile Q(veh)	-	-	1.9	-	5.7	22.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

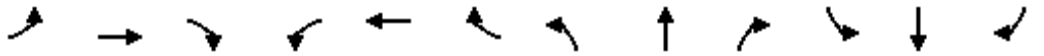
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1033	480	180	748	0	0	0	0	38	1	521
Future Volume (vph)	0	1033	480	180	748	0	0	0	0	38	1	521
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		200
Storage Lanes	0		1	1		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	9.5	22.5					22.5	22.5	22.5
Total Split (s)		50.0	50.0	25.0	75.0					25.0	25.0	25.0
Total Split (%)		50.0%	50.0%	25.0%	75.0%					25.0%	25.0%	25.0%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps

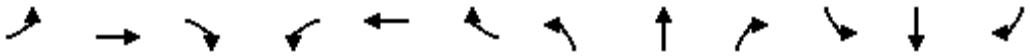




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1033	480	180	748	0	0	0	0	38	1	521
Future Volume (veh/h)	0	1033	480	180	748	0	0	0	0	38	1	521
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1123	522	196	813	0				41	1	566
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1892	844	227	2505	0				357	9	572
Arrive On Green	0.00	1.00	1.00	0.26	1.00	0.00				0.20	0.20	0.20
Sat Flow, veh/h	0	3647	1585	1781	3647	0				1741	42	2790
Grp Volume(v), veh/h	0	1123	522	196	813	0				42	0	566
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1781	1777	0				1783	0	1395
Q Serve(g_s), s	0.0	0.0	0.0	10.5	0.0	0.0				1.9	0.0	20.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	10.5	0.0	0.0				1.9	0.0	20.2
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1892	844	227	2505	0				366	0	572
V/C Ratio(X)	0.00	0.59	0.62	0.86	0.32	0.00				0.11	0.00	0.99
Avail Cap(c_a), veh/h	0	1892	844	365	2505	0				366	0	572
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.57	0.57	0.81	0.81	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	36.4	0.0	0.0				32.4	0.0	39.6
Incr Delay (d2), s/veh	0.0	0.8	2.0	9.5	0.3	0.0				0.6	0.0	35.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.5	4.5	0.1	0.0				0.9	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.8	2.0	45.9	0.3	0.0				33.0	0.0	74.8
LnGrp LOS	A	A	A	D	A	A				C	A	E
Approach Vol, veh/h		1645			1009						608	
Approach Delay, s/veh		1.2			9.1						72.0	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.3	57.7		25.0		75.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	20.5	45.5		20.5		70.5
Max Q Clear Time (g_c+I1), s	12.5	2.0		22.2		2.0
Green Ext Time (p_c), s	0.3	14.7		0.0		7.1

Intersection Summary			
HCM 6th Ctrl Delay		16.8	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	584	486	0	0	535	197	392	1	141	0	0	0
Future Volume (vph)	584	486	0	0	535	197	392	1	141	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		0	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour 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
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	7669.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	584	486	0	0	535	197	392	1	141	0	0	0
Future Vol, veh/h	584	486	0	0	535	197	392	1	141	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	584	486	0	0	535	197	392	1	141	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	732	0	-	-	-	0	2288	2386	486
Stage 1	-	-	-	-	-	-	1654	1654	-
Stage 2	-	-	-	-	-	-	634	732	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	873	-	0	0	-	-	~ 43	34	581
Stage 1	-	-	0	0	-	-	~ 171	155	-
Stage 2	-	-	0	0	-	-	529	427	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	873	-	-	-	-	-	~ 4	0	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	0	-
Stage 1	-	-	-	-	-	-	~ 14	0	-
Stage 2	-	-	-	-	-	-	529	0	-

Approach	EB	WB	NB
HCM Control Delay, s	9.3	0	$ 33532.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	4	581	873	-	-	-
HCM Lane V/C Ratio	98.25	0.243	0.669	-	-	-
HCM Control Delay (s)	$ 45558.6	13.2	17	0	-	-
HCM Lane LOS	F	B	C	A	-	-
HCM 95th %tile Q(veh)	51.5	0.9	5.3	-	-	-

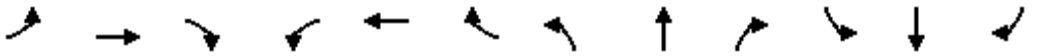
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	584	486	0	0	535	197	392	1	141	0	0	0
Future Volume (vph)	584	486	0	0	535	197	392	1	141	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	200		100	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	120			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							48%		10%			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	9.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	32.0	71.0			39.0		29.0	29.0	29.0			
Total Split (%)	32.0%	71.0%			39.0%		29.0%	29.0%	29.0%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.5	4.5	4.5			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps

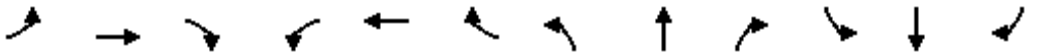




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	584	486	0	0	535	197	392	1	141	0	0	0
Future Volume (veh/h)	584	486	0	0	535	197	392	1	141	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	635	528	0	0	582	214	474	0	102			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	723	2651	0	0	1252	459	584	0	260			
Arrive On Green	0.35	1.00	0.00	0.00	0.98	0.98	0.16	0.00	0.16			
Sat Flow, veh/h	3456	3647	0	0	2639	934	3563	0	1585			
Grp Volume(v), veh/h	635	528	0	0	406	390	474	0	102			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1702	1781	0	1585			
Q Serve(g_s), s	17.3	0.0	0.0	0.0	0.7	0.7	12.8	0.0	5.7			
Cycle Q Clear(g_c), s	17.3	0.0	0.0	0.0	0.7	0.7	12.8	0.0	5.7			
Prop In Lane	1.00		0.00	0.00		0.55	1.00		1.00			
Lane Grp Cap(c), veh/h	723	2651	0	0	874	837	584	0	260			
V/C Ratio(X)	0.88	0.20	0.00	0.00	0.46	0.47	0.81	0.00	0.39			
Avail Cap(c_a), veh/h	950	2651	0	0	874	837	873	0	388			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.73	0.73	0.00	0.00	0.79	0.79	1.00	0.00	1.00			
Uniform Delay (d), s/veh	31.3	0.0	0.0	0.0	0.4	0.4	40.3	0.0	37.3			
Incr Delay (d2), s/veh	5.7	0.1	0.0	0.0	1.4	1.5	3.6	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	0.0	0.5	0.5	5.9	0.0	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.1	0.0	0.0	1.8	1.9	43.9	0.0	38.3			
LnGrp LOS	D	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		1163			796			576				
Approach Delay, s/veh		20.3			1.9			42.9				
Approach LOS		C			A			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		79.1			25.4	53.7		20.9				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		66.5			27.5	34.5		24.5				
Max Q Clear Time (g_c+I1), s		2.0			19.3	2.7		14.8				
Green Ext Time (p_c), s		4.1			1.7	5.9		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			19.6									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	336	14	18	562	65	8	485	36	44	24	162
Future Volume (vph)	278	336	14	18	562	65	8	485	36	44	24	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour 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
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	185.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	278	336	14	18	562	65	8	485	36	44	24	162
Future Vol, veh/h	278	336	14	18	562	65	8	485	36	44	24	162
Peak Hour 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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	278	336	14	18	562	65	8	485	36	44	24	162
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

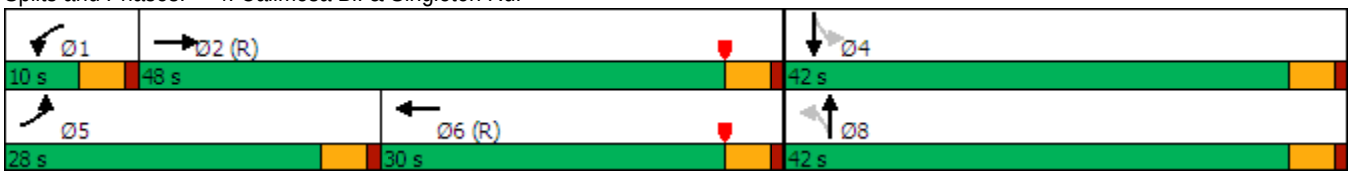
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	270.1	204.2	134.2	20.8
HCM LOS	F	F	F	C

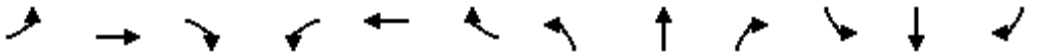
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	45%	0%	3%	0%	65%	0%
Vol Thru, %	98%	0%	55%	0%	97%	0%	35%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	493	36	614	14	580	65	68	162
LT Vol	8	0	278	0	18	0	44	0
Through Vol	485	0	336	0	562	0	24	0
RT Vol	0	36	0	14	0	65	0	162
Lane Flow Rate	493	36	614	14	580	65	68	162
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.194	0.08	1.525	0.031	1.404	0.144	0.19	0.406
Departure Headway (Hd)	10.321	9.568	10.26	9.281	10.331	9.573	12.659	11.554
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	355	377	362	388	360	377	286	314
Service Time	8.021	7.268	7.96	6.981	8.031	7.273	10.359	9.254
HCM Lane V/C Ratio	1.389	0.095	1.696	0.036	1.611	0.172	0.238	0.516
HCM Control Delay	143	13.1	276	12.3	225.5	13.9	18.3	21.9
HCM Lane LOS	F	B	F	B	F	B	C	C
HCM 95th-tile Q	17.4	0.3	29.8	0.1	25	0.5	0.7	1.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	336	14	18	562	65	8	485	36	44	24	162
Future Volume (vph)	278	336	14	18	562	65	8	485	36	44	24	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		100	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	28.0	48.0		10.0	30.0		42.0	42.0		42.0	42.0	
Total Split (%)	28.0%	48.0%		10.0%	30.0%		42.0%	42.0%		42.0%	42.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	336	14	18	562	65	8	485	36	44	24	162
Future Volume (veh/h)	278	336	14	18	562	65	8	485	36	44	24	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	354	15	19	592	68	8	511	38	46	25	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	1716	73	37	1072	123	382	603	45	137	72	494
Arrive On Green	0.36	0.99	0.99	0.02	0.33	0.33	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3474	147	1781	3213	368	1187	1719	128	858	206	1410
Grp Volume(v), veh/h	293	181	188	19	327	333	8	0	549	46	0	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1844	1781	1777	1804	1187	0	1847	858	0	1617
Q Serve(g_s), s	15.6	0.2	0.2	1.1	15.0	15.1	0.5	0.0	27.5	5.2	0.0	9.0
Cycle Q Clear(g_c), s	15.6	0.2	0.2	1.1	15.0	15.1	9.5	0.0	27.5	32.7	0.0	9.0
Prop In Lane	1.00		0.08	1.00		0.20	1.00		0.07	1.00		0.87
Lane Grp Cap(c), veh/h	322	878	911	37	593	602	382	0	648	137	0	567
V/C Ratio(X)	0.91	0.21	0.21	0.52	0.55	0.55	0.02	0.00	0.85	0.34	0.00	0.35
Avail Cap(c_a), veh/h	419	878	911	98	593	602	411	0	693	158	0	606
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	0.3	0.3	48.5	27.2	27.2	27.5	0.0	30.0	45.1	0.0	24.0
Incr Delay (d2), s/veh	19.6	0.5	0.5	11.0	3.7	3.6	0.0	0.0	9.2	1.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.2	0.2	0.6	6.9	7.0	0.1	0.0	13.5	1.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	0.8	0.8	59.5	30.9	30.9	27.5	0.0	39.2	46.5	0.0	24.4
LnGrp LOS	D	A	A	E	C	C	C	A	D	D	A	C
Approach Vol, veh/h		662			679			557			242	
Approach Delay, s/veh		22.9			31.7			39.0			28.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	53.9		39.6	22.6	37.9		39.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	43.5		37.5	23.5	25.5		37.5				
Max Q Clear Time (g_c+I1), s	3.1	2.2		34.7	17.6	17.1		29.5				
Green Ext Time (p_c), s	0.0	2.3		0.4	0.5	2.6		2.3				

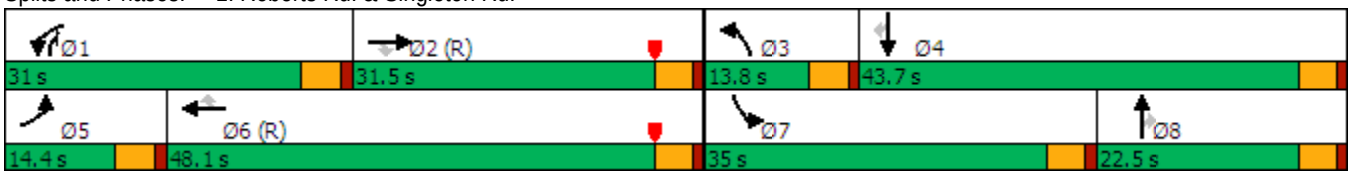
Intersection Summary												
HCM 6th Ctrl Delay			30.5									
HCM 6th LOS			C									

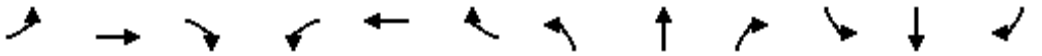
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	498	101	491	326	185	51	54	373	599	60	33
Future Volume (vph)	59	498	101	491	326	185	51	54	373	599	60	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	14.4	31.5	31.5	31.0	48.1	48.1	13.8	22.5	31.0	35.0	43.7	43.7
Total Split (%)	12.0%	26.3%	26.3%	25.8%	40.1%	40.1%	11.5%	18.8%	25.8%	29.2%	36.4%	36.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 49 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Roberts Rd. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	498	101	491	326	185	51	54	373	599	60	33
Future Volume (veh/h)	59	498	101	491	326	185	51	54	373	599	60	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	541	110	534	354	201	55	59	405	651	65	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1106	493	611	1570	700	71	533	518	732	1145	511
Arrive On Green	0.05	0.31	0.31	0.18	0.44	0.44	0.04	0.15	0.15	0.21	0.32	0.32
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	64	541	110	534	354	201	55	59	405	651	65	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.3	14.8	6.2	18.1	7.4	9.7	3.7	1.7	18.0	21.9	1.5	1.9
Cycle Q Clear(g_c), s	4.3	14.8	6.2	18.1	7.4	9.7	3.7	1.7	18.0	21.9	1.5	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	1106	493	611	1570	700	71	533	518	732	1145	511
V/C Ratio(X)	0.78	0.49	0.22	0.87	0.23	0.29	0.77	0.11	0.78	0.89	0.06	0.07
Avail Cap(c_a), veh/h	147	1106	493	763	1570	700	138	533	518	878	1161	518
HCM 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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	33.6	30.6	48.1	20.8	21.4	57.1	44.1	36.5	45.9	28.1	28.2
Incr Delay (d2), s/veh	14.4	1.5	1.0	9.3	0.3	1.0	16.1	0.1	7.5	9.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.6	2.5	8.5	3.2	3.8	2.0	0.8	11.7	10.4	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	35.1	31.6	57.4	21.1	22.4	73.1	44.2	44.1	55.7	28.1	28.3
LnGrp LOS	E	D	C	E	C	C	E	D	D	E	C	C
Approach Vol, veh/h		715			1089			519			752	
Approach Delay, s/veh		37.8			39.1			47.1			52.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.7	41.8	9.3	43.2	10.1	57.5	29.9	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.5	27.0	9.3	39.2	9.9	43.6	30.5	18.0
Max Q Clear Time (g_c+I1), s	20.1	16.8	5.7	3.9	6.3	11.7	23.9	20.0
Green Ext Time (p_c), s	1.2	2.9	0.0	0.5	0.0	3.2	1.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1453	20	100	1168	12	59
Future Volume (vph)	1453	20	100	1168	12	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			691	295	
Travel Time (s)	6.1			15.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	61.4		16.0	77.4	22.6	22.6
Total Split (%)	61.4%		16.0%	77.4%	22.6%	22.6%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		None	C-Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 10: (#6) TC-4 Dwy. & Singleton Rd.

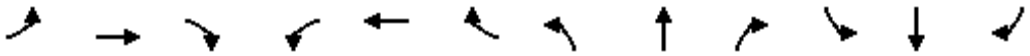




Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1453	20	100	1168	12	59
Future Volume (veh/h)	1453	20	100	1168	12	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1579	22	109	1270	13	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2182	30	135	2591	322	287
Arrive On Green	0.61	0.61	0.15	1.00	0.18	0.18
Sat Flow, veh/h	3682	50	1781	3647	1781	1585
Grp Volume(v), veh/h	781	820	109	1270	13	64
Grp Sat Flow(s),veh/h/ln	1777	1861	1781	1777	1781	1585
Q Serve(g_s), s	30.7	30.9	5.9	0.0	0.6	3.4
Cycle Q Clear(g_c), s	30.7	30.9	5.9	0.0	0.6	3.4
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1080	1132	135	2591	322	287
V/C Ratio(X)	0.72	0.72	0.81	0.49	0.04	0.22
Avail Cap(c_a), veh/h	1080	1132	205	2591	322	287
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	13.7	13.7	41.7	0.0	33.8	34.9
Incr Delay (d2), s/veh	4.2	4.0	11.5	0.6	0.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	13.0	2.8	0.2	0.3	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.9	17.8	53.2	0.6	34.0	36.7
LnGrp LOS	B	B	D	A	C	D
Approach Vol, veh/h	1601			1379	77	
Approach Delay, s/veh	17.8			4.8	36.3	
Approach LOS	B			A	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.1	65.3				77.4	22.6
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	56.9				72.9	18.1
Max Q Clear Time (g_c+I1), s	7.9	32.9				2.0	5.4
Green Ext Time (p_c), s	0.1	13.4				14.3	0.1

Intersection Summary		
HCM 6th Ctrl Delay		12.4
HCM 6th LOS		B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	565	22	67	271	73	7	1	20	73	1	31
Future Volume (vph)	31	565	22	67	271	73	7	1	20	73	1	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

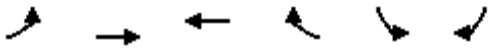
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	565	22	67	271	73	7	1	20	73	1	31
Future Vol, veh/h	31	565	22	67	271	73	7	1	20	73	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	614	24	73	295	79	8	1	22	77	1	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	374	0	0	638	0	0	988	1214	319	857	1187	187
Stage 1	-	-	-	-	-	-	694	694	-	481	481	-
Stage 2	-	-	-	-	-	-	294	520	-	376	706	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1181	-	-	942	-	-	201	180	677	251	187	823
Stage 1	-	-	-	-	-	-	399	442	-	535	552	-
Stage 2	-	-	-	-	-	-	690	530	-	617	437	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1181	-	-	942	-	-	177	161	677	222	168	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	161	-	222	168	-
Stage 1	-	-	-	-	-	-	387	429	-	519	509	-
Stage 2	-	-	-	-	-	-	610	489	-	579	424	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.5	15.5	25.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	372	1181	-	-	942	-	-	282
HCM Lane V/C Ratio	0.082	0.029	-	-	0.077	-	-	0.392
HCM Control Delay (s)	15.5	8.1	-	-	9.1	-	-	25.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.3	-	-	1.8



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1473	939	241	0	64
Future Volume (vph)	0	1473	939	241	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

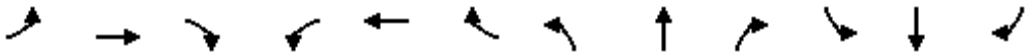
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1473	939	241	0	64
Future Vol, veh/h	0	1473	939	241	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1601	1021	262	0	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	642
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	417
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	417
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	417
HCM Lane V/C Ratio	-	-	-	0.167
HCM Control Delay (s)	-	-	-	15.4
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	103	258	1	1	103	119	80	1	335	1
Future Volume (vph)	1	1	103	258	1	1	103	119	80	1	335	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	103	258	1	1	103	119	80	1	335	1
Future Vol, veh/h	1	1	103	258	1	1	103	119	80	1	335	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	112	280	1	1	112	129	87	1	364	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	656	807	183	582	764	108	365	0	0	216	0	0
Stage 1	367	367	-	397	397	-	-	-	-	-	-	-
Stage 2	289	440	-	185	367	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	6.2	6.2	6.2	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	351	314	828	492	357	946	1190	-	-	1351	-	-
Stage 1	625	621	-	600	602	-	-	-	-	-	-	-
Stage 2	694	576	-	799	621	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	324	284	828	394	323	946	1190	-	-	1351	-	-
Mov Cap-2 Maneuver	324	284	-	394	323	-	-	-	-	-	-	-
Stage 1	566	620	-	544	545	-	-	-	-	-	-	-
Stage 2	627	522	-	689	620	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	34	2.8	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1190	-	-	802	395	1351	-	-
HCM Lane V/C Ratio	0.094	-	-	0.142	0.715	0.001	-	-
HCM Control Delay (s)	8.3	-	-	10.2	34	7.7	-	-
HCM Lane LOS	A	-	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	5.4	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	70	411	20	119	534
Future Volume (vph)	12	70	411	20	119	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	90				90	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	294		522			1236
Travel Time (s)	6.7		11.9			28.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		9.5	22.5
Total Split (s)	29.0		41.0		30.0	71.0
Total Split (%)	29.0%		41.0%		30.0%	71.0%
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 14: Roberts Rd. & (#10) TC-4 W. Dwy.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	70	411	20	119	534
Future Volume (veh/h)	12	70	411	20	119	534
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	76	447	22	129	580
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	16	96	2425	119	162	2983
Arrive On Green	0.07	0.07	1.00	1.00	0.09	0.84
Sat Flow, veh/h	233	1362	3541	169	1781	3647
Grp Volume(v), veh/h	90	0	230	239	129	580
Grp Sat Flow(s),veh/h/ln	1613	0	1777	1840	1781	1777
Q Serve(g_s), s	5.5	0.0	0.0	0.0	7.1	3.1
Cycle Q Clear(g_c), s	5.5	0.0	0.0	0.0	7.1	3.1
Prop In Lane	0.14	0.84		0.09	1.00	
Lane Grp Cap(c), veh/h	114	0	1250	1294	162	2983
V/C Ratio(X)	0.79	0.00	0.18	0.18	0.79	0.19
Avail Cap(c_a), veh/h	395	0	1250	1294	454	2983
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.99	0.99	0.75	0.75
Uniform Delay (d), s/veh	45.7	0.0	0.0	0.0	44.5	1.5
Incr Delay (d2), s/veh	11.5	0.0	0.3	0.3	6.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.1	0.1	3.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.2	0.0	0.3	0.3	51.0	1.6
LnGrp LOS	E	A	A	A	D	A
Approach Vol, veh/h	90		469			709
Approach Delay, s/veh	57.2		0.3			10.6
Approach LOS	E		A			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.6	74.8			88.4	11.6
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	25.5	36.5			66.5	24.5
Max Q Clear Time (g_c+I1), s	9.1	2.0			5.1	7.5
Green Ext Time (p_c), s	0.3	3.0			4.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

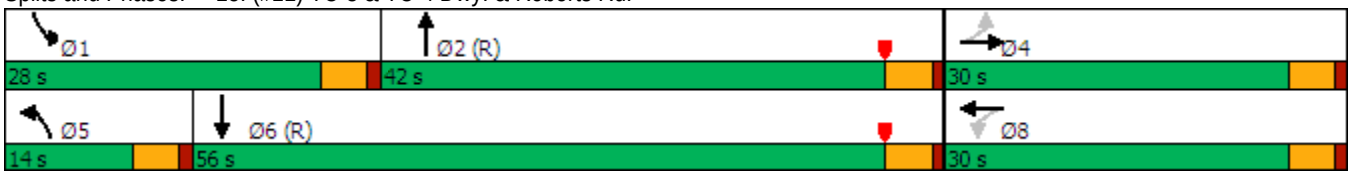
Notes

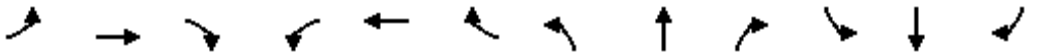
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1	5	24	1	60	15	358	40	101	400	45
Future Volume (vph)	14	1	5	24	1	60	15	358	40	101	400	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			351			1103			522	
Travel Time (s)		7.1			8.0			25.1			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		14.0	42.0		28.0	56.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		14.0%	42.0%		28.0%	56.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 15: (#11) TC-3 & TC-4 Dwy. & Roberts Rd.

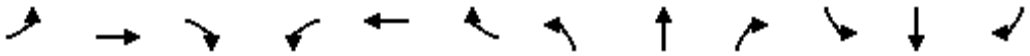




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1	5	24	1	60	15	358	40	101	400	45
Future Volume (veh/h)	14	1	5	24	1	60	15	358	40	101	400	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	1	5	26	1	65	16	389	43	110	435	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	16	28	72	10	86	32	2291	252	139	2478	278
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.02	0.71	0.71	0.16	1.00	1.00
Sat Flow, veh/h	966	204	366	330	129	1105	1781	3229	355	1781	3221	361
Grp Volume(v), veh/h	21	0	0	92	0	0	16	213	219	110	239	245
Grp Sat Flow(s),veh/h/ln	1535	0	0	1564	0	0	1781	1777	1806	1781	1777	1805
Q Serve(g_s), s	0.0	0.0	0.0	3.9	0.0	0.0	0.9	4.0	4.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	5.7	0.0	0.0	0.9	4.0	4.0	5.9	0.0	0.0
Prop In Lane	0.71		0.24	0.28		0.71	1.00		0.20	1.00		0.20
Lane Grp Cap(c), veh/h	181	0	0	168	0	0	32	1261	1282	139	1367	1389
V/C Ratio(X)	0.12	0.00	0.00	0.55	0.00	0.00	0.50	0.17	0.17	0.79	0.17	0.18
Avail Cap(c_a), veh/h	431	0	0	440	0	0	169	1261	1282	419	1367	1389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	43.0	0.0	0.0	45.1	0.0	0.0	48.7	4.8	4.8	41.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	2.8	0.0	0.0	11.6	0.3	0.3	9.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	2.4	0.0	0.0	0.5	1.4	1.4	2.8	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	0.0	0.0	47.9	0.0	0.0	60.3	5.1	5.1	51.0	0.3	0.3
LnGrp LOS	D	A	A	D	A	A	E	A	A	D	A	A
Approach Vol, veh/h		21			92			448			594	
Approach Delay, s/veh		43.3			47.9			7.1			9.7	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.3	75.5		12.3	6.3	81.4		12.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	37.5		25.5	9.5	51.5		25.5				
Max Q Clear Time (g_c+I1), s	7.9	6.0		3.1	2.9	2.0		7.7				
Green Ext Time (p_c), s	0.2	2.7		0.1	0.0	3.3		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		12.3	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Future Volume (vph)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1283	633	136	1393	0	0	0	0	61	1	1046
Future Vol, veh/h	0	1283	633	136	1393	0	0	0	0	61	1	1046
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1395	688	148	1514	0	0	0	0	66	1	1137

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	2083	0	0	3549	3893	1514
Stage 1	-	-	-	-	-	-	1810	1810	-
Stage 2	-	-	-	-	-	-	1739	2083	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	266	-	0	~ 7	3	~ 147
Stage 1	0	-	-	-	-	0	143	130	-
Stage 2	0	-	-	-	-	0	155	95	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	266	-	-	0	0	~ 147
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	0	-
Stage 1	-	-	-	-	-	-	143	0	-
Stage 2	-	-	-	-	-	-	0	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3	
HCM LOS			-

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	266	-	-	147
HCM Lane V/C Ratio	-	-	0.556	-	-	7.742
HCM Control Delay (s)	-	-	34.2	0	-	$ 3091.2
HCM Lane LOS	-	-	D	A	-	F
HCM 95th %tile Q(veh)	-	-	3.1	-	-	127.2

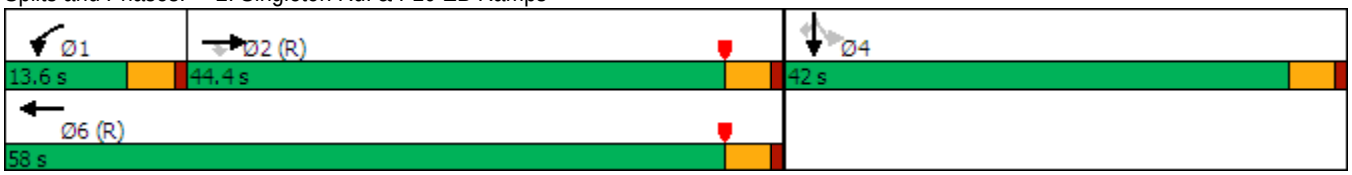
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

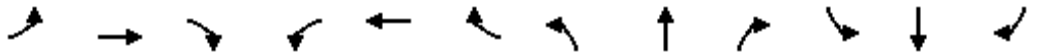
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Future Volume (vph)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	100		0	0		0	0		200
Storage Lanes	0		1	1		0	0		0	0		2
Taper Length (ft)	90			60			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		691			661			1037			787	
Travel Time (s)		15.7			15.0			23.6			17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phase		2	2	1	6					4	4	4
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Minimum Split (s)		22.5	22.5	9.5	22.5					22.5	22.5	22.5
Total Split (s)		44.4	44.4	13.6	58.0					42.0	42.0	42.0
Total Split (%)		44.4%	44.4%	13.6%	58.0%					42.0%	42.0%	42.0%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Singleton Rd. & I-10 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Future Volume (veh/h)	0	1283	633	136	1393	0	0	0	0	61	1	1046
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1395	688	148	1514	0				66	1	1137
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1418	632	162	1901	0				658	10	1046
Arrive On Green	0.00	0.53	0.53	0.18	1.00	0.00				0.38	0.38	0.38
Sat Flow, veh/h	0	3647	1585	1781	3647	0				1756	27	2790
Grp Volume(v), veh/h	0	1395	688	148	1514	0				67	0	1137
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1781	1777	0				1783	0	1395
Q Serve(g_s), s	0.0	38.6	39.9	8.2	0.0	0.0				2.4	0.0	37.5
Cycle Q Clear(g_c), s	0.0	38.6	39.9	8.2	0.0	0.0				2.4	0.0	37.5
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1418	632	162	1901	0				668	0	1046
V/C Ratio(X)	0.00	0.98	1.09	0.91	0.80	0.00				0.10	0.00	1.09
Avail Cap(c_a), veh/h	0	1418	632	162	1901	0				668	0	1046
HCM Platoon Ratio	1.00	1.33	1.33	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.15	0.15	0.16	0.16	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.1	23.5	40.5	0.0	0.0				20.3	0.0	31.3
Incr Delay (d2), s/veh	0.0	6.2	44.3	12.3	0.6	0.0				0.3	0.0	54.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.6	20.2	3.8	0.2	0.0				1.1	0.0	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.4	67.7	52.8	0.6	0.0				20.6	0.0	85.8
LnGrp LOS	A	C	F	D	A	A				C	A	F
Approach Vol, veh/h		2083			1662						1204	
Approach Delay, s/veh		42.1			5.2						82.1	
Approach LOS		D			A						F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.6	44.4		42.0		58.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	9.1	39.9		37.5		53.5
Max Q Clear Time (g_c+I1), s	10.2	41.9		39.5		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		18.5

Intersection Summary			
HCM 6th Ctrl Delay		39.4	
HCM 6th LOS		D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	879	465	0	0	743	188	786	1	158	0	0	0
Future Volume (vph)	879	465	0	0	743	188	786	1	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	200		0	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	55.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	879	465	0	0	743	188	786	1	158	0	0	0
Future Vol, veh/h	879	465	0	0	743	188	786	1	158	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	955	505	0	0	808	204	854	1	172	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1012	0	-	-	-	0	3325	3427	505
Stage 1	-	-	-	-	-	-	2415	2415	-
Stage 2	-	-	-	-	-	-	910	1012	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	~ 685	-	0	0	-	-	~ 9	7	567
Stage 1	-	-	0	0	-	-	~ 70	64	-
Stage 2	-	-	0	0	-	-	~ 393	317	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	~ 685	-	-	-	-	-	0	0	567
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	0	-
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	~ 393	0	-

Approach	EB	WB	NB
HCM Control Delay, s	134	0	
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	567	~ 685	-	-	-
HCM Lane V/C Ratio	-	0.303	1.395	-	-	-
HCM Control Delay (s)	-	14.1	204.9	0	-	-
HCM Lane LOS	-	B	F	A	-	-
HCM 95th %tile Q(veh)	-	1.3	42.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	879	465	0	0	743	188	786	1	158	0	0	0
Future Volume (vph)	879	465	0	0	743	188	786	1	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	200		100	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	120			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		661			577			897			897	
Travel Time (s)		15.0			13.1			20.4			20.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							49%		10%			
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Minimum Split (s)	9.5	22.5			22.5		22.5	22.5	22.5			
Total Split (s)	33.6	67.2			33.6		32.8	32.8	32.8			
Total Split (%)	33.6%	67.2%			33.6%		32.8%	32.8%	32.8%			
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Total Lost Time (s)	4.5	4.5			4.5		4.5	4.5	4.5			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		None	None	None			

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 3: Singleton Rd. & I-10 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	879	465	0	0	743	188	786	1	158	0	0	0
Future Volume (veh/h)	879	465	0	0	743	188	786	1	158	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	955	505	0	0	808	204	908	0	115			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	997	2256	0	0	847	214	980	0	436			
Arrive On Green	0.48	1.00	0.00	0.00	0.40	0.40	0.28	0.00	0.28			
Sat Flow, veh/h	3456	3647	0	0	2904	709	3563	0	1585			
Grp Volume(v), veh/h	955	505	0	0	511	501	908	0	115			
Grp Sat Flow(s),veh/h/ln	1728	1777	0	0	1777	1743	1781	0	1585			
Q Serve(g_s), s	26.6	0.0	0.0	0.0	27.9	27.9	24.8	0.0	5.7			
Cycle Q Clear(g_c), s	26.6	0.0	0.0	0.0	27.9	27.9	24.8	0.0	5.7			
Prop In Lane	1.00		0.00	0.00		0.41	1.00		1.00			
Lane Grp Cap(c), veh/h	997	2256	0	0	535	525	980	0	436			
V/C Ratio(X)	0.96	0.22	0.00	0.00	0.95	0.95	0.93	0.00	0.26			
Avail Cap(c_a), veh/h	1006	2256	0	0	535	525	1008	0	449			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.12	0.12	0.00	0.00	0.89	0.89	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.3	0.0	0.0	0.0	29.3	29.3	35.2	0.0	28.3			
Incr Delay (d2), s/veh	3.8	0.0	0.0	0.0	27.0	27.3	13.7	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.0	0.0	0.0	0.0	14.6	14.4	12.4	0.0	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	0.0	0.0	56.3	56.6	49.0	0.0	28.6			
LnGrp LOS	C	A	A	A	E	E	D	A	C			
Approach Vol, veh/h		1460			1012			1023				
Approach Delay, s/veh		19.1			56.5			46.7				
Approach LOS		B			E			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		68.0			33.3	34.6		32.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		62.7			29.1	29.1		28.3				
Max Q Clear Time (g_c+I1), s		2.0			28.6	29.9		26.8				
Green Ext Time (p_c), s		3.9			0.2	0.0		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

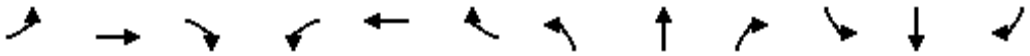
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	337	19	20	693	25	2	109	44	173	97	237
Future Volume (vph)	267	337	19	20	693	25	2	109	44	173	97	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		100	150		50
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	31.0	57.0		10.0	36.0		33.0	33.0		33.0	33.0	
Total Split (%)	31.0%	57.0%		10.0%	36.0%		33.0%	33.0%		33.0%	33.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 4: Calimesa Bl. & Singleton Rd.

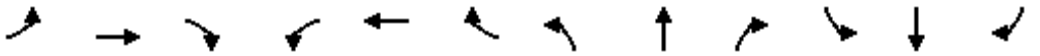




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	337	19	20	693	25	2	109	44	173	97	237
Future Volume (veh/h)	267	337	19	20	693	25	2	109	44	173	97	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	272	344	19	20	707	26	2	111	45	177	99	242
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	2050	113	38	1570	58	124	310	126	284	118	289
Arrive On Green	0.34	1.00	1.00	0.02	0.45	0.45	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3425	188	1781	3496	129	1039	1265	513	1231	482	1177
Grp Volume(v), veh/h	272	178	185	20	359	374	2	0	156	177	0	341
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1777	1847	1039	0	1778	1231	0	1659
Q Serve(g_s), s	14.5	0.0	0.0	1.1	14.0	14.0	0.2	0.0	7.3	13.9	0.0	19.5
Cycle Q Clear(g_c), s	14.5	0.0	0.0	1.1	14.0	14.0	19.7	0.0	7.3	21.2	0.0	19.5
Prop In Lane	1.00		0.10	1.00		0.07	1.00		0.29	1.00		0.71
Lane Grp Cap(c), veh/h	304	1063	1099	38	798	830	124	0	436	284	0	407
V/C Ratio(X)	0.90	0.17	0.17	0.53	0.45	0.45	0.02	0.00	0.36	0.62	0.00	0.84
Avail Cap(c_a), veh/h	472	1063	1099	98	798	830	165	0	507	333	0	473
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.1	0.0	0.0	48.4	19.0	19.0	45.2	0.0	31.2	40.0	0.0	35.9
Incr Delay (d2), s/veh	13.1	0.3	0.3	10.9	1.8	1.8	0.1	0.0	0.5	2.7	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.1	0.1	0.6	6.0	6.2	0.0	0.0	3.1	4.4	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.3	0.3	59.3	20.8	20.8	45.3	0.0	31.7	42.7	0.0	47.1
LnGrp LOS	D	A	A	E	C	C	D	A	C	D	A	D
Approach Vol, veh/h		635			753			158			518	
Approach Delay, s/veh		19.5			21.8			31.9			45.6	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	64.3		29.0	21.6	49.4		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	52.5		28.5	26.5	31.5		28.5				
Max Q Clear Time (g_c+I1), s	3.1	2.0		23.2	16.5	16.0		21.7				
Green Ext Time (p_c), s	0.0	2.3		1.4	0.6	4.1		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			27.9									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	337	19	20	693	25	2	109	44	173	97	237
Future Volume (vph)	267	337	19	20	693	25	2	109	44	173	97	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		50	150		50	150		50	150		50
Storage Lanes	0		1	0		1	0		1	0		1
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		577			500			733			462	
Travel Time (s)		13.1			11.4			16.7			10.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	187.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	267	337	19	20	693	25	2	109	44	173	97	237
Future Vol, veh/h	267	337	19	20	693	25	2	109	44	173	97	237
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	272	344	19	20	707	26	2	111	45	177	99	242
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

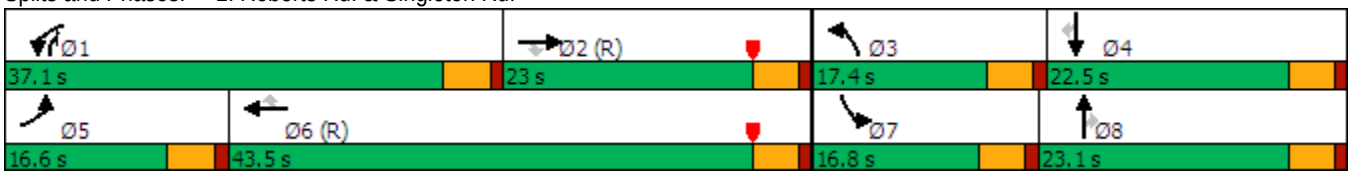
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	220.6	305.5	17.8	27
HCM LOS	F	F	C	D

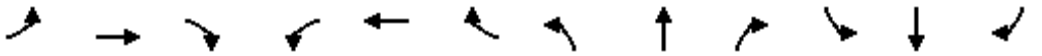
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	0%	44%	0%	3%	0%	64%	0%
Vol Thru, %	98%	0%	56%	0%	97%	0%	36%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	44	604	19	713	25	270	237
LT Vol	2	0	267	0	20	0	173	0
Through Vol	109	0	337	0	693	0	97	0
RT Vol	0	44	0	19	0	25	0	237
Lane Flow Rate	113	45	616	19	728	26	276	242
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.295	0.108	1.417	0.04	1.629	0.052	0.667	0.517
Departure Headway (Hd)	11.562	10.8	9.296	8.33	8.803	8.057	10.411	9.326
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	313	334	394	433	422	447	350	389
Service Time	9.262	8.5	6.996	6.03	6.503	5.757	8.111	7.026
HCM Lane V/C Ratio	0.361	0.135	1.563	0.044	1.725	0.058	0.789	0.622
HCM Control Delay	19	14.8	227.2	11.4	315.8	11.2	31.7	21.6
HCM Lane LOS	C	B	F	B	F	B	D	C
HCM 95th-tile Q	1.2	0.4	27.6	0.1	38.6	0.2	4.6	2.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	420	162	922	634	404	203	86	862	357	37	22
Future Volume (vph)	91	420	162	922	634	404	203	86	862	357	37	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		600			357			1236			907	
Travel Time (s)		13.6			8.1			28.1			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	16.6	23.0	23.0	37.1	43.5	43.5	17.4	23.1	37.1	16.8	22.5	22.5
Total Split (%)	16.6%	23.0%	23.0%	37.1%	43.5%	43.5%	17.4%	23.1%	37.1%	16.8%	22.5%	22.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Roberts Rd. & Singleton Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	420	162	922	634	404	203	86	862	357	37	22
Future Volume (veh/h)	91	420	162	922	634	404	203	86	862	357	37	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	457	176	1002	689	439	221	93	937	388	40	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	723	322	1063	1565	698	230	661	782	425	640	285
Arrive On Green	0.07	0.20	0.20	0.51	0.74	0.74	0.13	0.19	0.19	0.12	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	3456	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	99	457	176	1002	689	439	221	93	937	388	40	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.5	11.8	10.0	27.3	7.6	13.6	12.3	2.2	18.6	11.1	0.9	1.3
Cycle Q Clear(g_c), s	5.5	11.8	10.0	27.3	7.6	13.6	12.3	2.2	18.6	11.1	0.9	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	723	322	1063	1565	698	230	661	782	425	640	285
V/C Ratio(X)	0.79	0.63	0.55	0.94	0.44	0.63	0.96	0.14	1.20	0.91	0.06	0.08
Avail Cap(c_a), veh/h	216	723	322	1127	1565	698	230	661	782	425	640	285
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	36.4	35.7	23.5	8.4	9.2	43.3	34.0	25.3	43.3	34.0	34.1
Incr Delay (d2), s/veh	10.3	4.2	6.5	14.6	0.9	4.3	40.7	0.1	98.2	23.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.5	4.4	10.6	2.5	3.9	8.0	0.9	38.6	6.1	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	40.6	42.2	38.1	9.3	13.5	84.0	34.1	123.5	67.1	34.0	34.3
LnGrp LOS	E	D	D	D	A	B	F	C	F	E	C	C
Approach Vol, veh/h		732			2130			1251			452	
Approach Delay, s/veh		43.1			23.7			109.9			62.5	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.3	24.8	17.4	22.5	11.6	48.5	16.8	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.6	18.5	12.9	18.0	12.1	39.0	12.3	18.6
Max Q Clear Time (g_c+I1), s	29.3	13.8	14.3	3.3	7.5	15.6	13.1	20.6
Green Ext Time (p_c), s	1.4	1.6	0.0	0.2	0.1	6.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1578	61	308	2131	67	337
Future Volume (vph)	1578	61	308	2131	67	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			90		90	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	267			691	295	
Travel Time (s)	6.1			15.7	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases						8
Detector Phase	2		1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	53.3		24.2	77.5	22.5	22.5
Total Split (%)	53.3%		24.2%	77.5%	22.5%	22.5%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max		None	C-Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 10: (#6) TC-4 Dwy. & Singleton Rd.

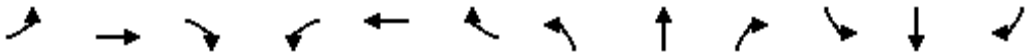




Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1578	61	308	2131	67	337
Future Volume (veh/h)	1578	61	308	2131	67	337
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1715	66	335	2316	73	366
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1703	65	351	2594	321	285
Arrive On Green	0.65	0.65	0.26	0.97	0.18	0.18
Sat Flow, veh/h	3583	134	1781	3647	1781	1585
Grp Volume(v), veh/h	869	912	335	2316	73	366
Grp Sat Flow(s),veh/h/ln	1777	1846	1781	1777	1781	1585
Q Serve(g_s), s	48.8	48.8	18.5	14.2	3.5	18.0
Cycle Q Clear(g_c), s	48.8	48.8	18.5	14.2	3.5	18.0
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	867	901	351	2594	321	285
V/C Ratio(X)	1.00	1.01	0.95	0.89	0.23	1.28
Avail Cap(c_a), veh/h	867	901	351	2594	321	285
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.30	0.30	1.00	1.00
Uniform Delay (d), s/veh	17.5	17.5	36.5	0.6	35.1	41.0
Incr Delay (d2), s/veh	31.2	32.9	16.6	1.7	1.6	151.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	23.4	9.1	1.2	1.7	18.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.8	50.5	53.1	2.3	36.7	192.3
LnGrp LOS	F	F	D	A	D	F
Approach Vol, veh/h	1781			2651	439	
Approach Delay, s/veh	49.6			8.7	166.5	
Approach LOS	D			A	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	24.2	53.3				77.5	22.5
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	19.7	48.8				73.0	18.0
Max Q Clear Time (g_c+I1), s	20.5	50.8				16.2	20.0
Green Ext Time (p_c), s	0.0	0.0				40.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay		37.9	
HCM 6th LOS		D	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	576	8	25	751	82	20	1	60	39	1	17
Future Volume (vph)	35	576	8	25	751	82	20	1	60	39	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		808			600			329			331	
Travel Time (s)		18.4			13.6			7.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

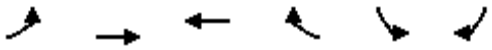
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	576	8	25	751	82	20	1	60	39	1	17
Future Vol, veh/h	35	576	8	25	751	82	20	1	60	39	1	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	626	9	27	816	89	22	1	65	41	1	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	905	0	0	635	0	0	1170	1666	318	1305	1626	453
Stage 1	-	-	-	-	-	-	707	707	-	915	915	-
Stage 2	-	-	-	-	-	-	463	959	-	390	711	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	6.5	6.5	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	747	-	-	944	-	-	148	96	678	172	103	585
Stage 1	-	-	-	-	-	-	392	436	-	294	350	-
Stage 2	-	-	-	-	-	-	548	334	-	606	434	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	747	-	-	944	-	-	134	88	678	145	95	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	88	-	145	95	-
Stage 1	-	-	-	-	-	-	372	414	-	279	340	-
Stage 2	-	-	-	-	-	-	514	324	-	518	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	20.1	33.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	747	-	-	944	-	-	185
HCM Lane V/C Ratio	0.271	0.051	-	-	0.029	-	-	0.324
HCM Control Delay (s)	20.1	10.1	-	-	8.9	-	-	33.5
HCM Lane LOS	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0.1	-	-	1.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1639	1926	272	0	34
Future Volume (vph)	0	1639	1926	272	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		30	
Link Distance (ft)		357	267		255	
Travel Time (s)		8.1	6.1		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

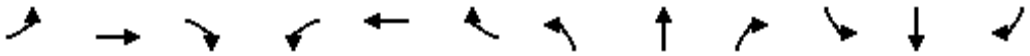
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1639	1926	272	0	34
Future Vol, veh/h	0	1639	1926	272	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1782	2093	296	0	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1195
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	179
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	179
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	30.3
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	179
HCM Lane V/C Ratio	-	-	-	0.206
HCM Control Delay (s)	-	-	-	30.3
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	55	136	1	1	117	377	91	1	228	1
Future Volume (vph)	1	1	55	136	1	1	117	377	91	1	228	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		273			198			907			494	
Travel Time (s)		6.2			4.5			20.6			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	55	136	1	1	117	377	91	1	228	1
Future Vol, veh/h	1	1	55	136	1	1	117	377	91	1	228	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	60	148	1	1	127	410	99	1	248	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	711	1014	125	841	965	255	249	0	0	509	0	0
Stage 1	251	251	-	714	714	-	-	-	-	-	-	-
Stage 2	460	763	-	127	251	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	6.6	6.6	6.6	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	320	237	902	321	249	762	1314	-	-	1052	-	-
Stage 1	731	698	-	388	433	-	-	-	-	-	-	-
Stage 2	551	411	-	863	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	295	214	902	276	225	762	1314	-	-	1052	-	-
Mov Cap-2 Maneuver	295	214	-	276	225	-	-	-	-	-	-	-
Stage 1	660	697	-	350	391	-	-	-	-	-	-	-
Stage 2	496	371	-	804	697	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	32.3	1.6	0
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1314	-	-	826	277	1052	-	-
HCM Lane V/C Ratio	0.097	-	-	0.075	0.542	0.001	-	-
HCM Control Delay (s)	8	-	-	9.7	32.3	8.4	-	-
HCM Lane LOS	A	-	-	A	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	3	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	401	753	61	367	754
Future Volume (vph)	67	401	753	61	367	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	150	
Storage Lanes	1	0		0	1	
Taper Length (ft)	90				90	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	294		522			1236
Travel Time (s)	6.7		11.9			28.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		9.5	22.5
Total Split (s)	32.0		35.0		33.0	68.0
Total Split (%)	32.0%		35.0%		33.0%	68.0%
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Max		None	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 14: Roberts Rd. & (#10) TC-4 W. Dwy.





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	67	401	753	61	367	754
Future Volume (veh/h)	67	401	753	61	367	754
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	436	818	66	399	820
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	63	379	1170	94	425	2257
Arrive On Green	0.28	0.28	0.70	0.70	0.48	1.00
Sat Flow, veh/h	231	1377	3424	269	1781	3647
Grp Volume(v), veh/h	510	0	436	448	399	820
Grp Sat Flow(s),veh/h/ln	1611	0	1777	1822	1781	1777
Q Serve(g_s), s	27.5	0.0	14.3	14.3	21.2	0.0
Cycle Q Clear(g_c), s	27.5	0.0	14.3	14.3	21.2	0.0
Prop In Lane	0.14	0.85		0.15	1.00	
Lane Grp Cap(c), veh/h	443	0	624	640	425	2257
V/C Ratio(X)	1.15	0.00	0.70	0.70	0.94	0.36
Avail Cap(c_a), veh/h	443	0	624	640	508	2257
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.82	0.82	0.75	0.75
Uniform Delay (d), s/veh	36.3	0.0	11.8	11.8	25.5	0.0
Incr Delay (d2), s/veh	91.1	0.0	5.3	5.2	19.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	0.0	4.3	4.4	8.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	127.4	0.0	17.0	16.9	44.6	0.3
LnGrp LOS	F	A	B	B	D	A
Approach Vol, veh/h	510		884			1219
Approach Delay, s/veh	127.4		17.0			14.8
Approach LOS	F		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	28.4	39.6			68.0	32.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	28.5	30.5			63.5	27.5
Max Q Clear Time (g_c+I1), s	23.2	16.3			2.0	29.5
Green Ext Time (p_c), s	0.6	4.9			7.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

Notes

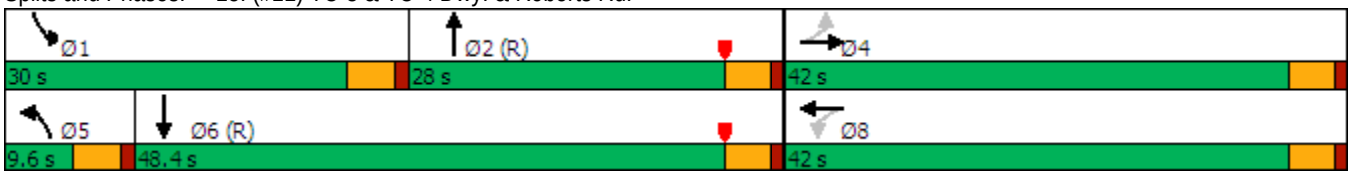
User approved volume balancing among the lanes for turning movement.

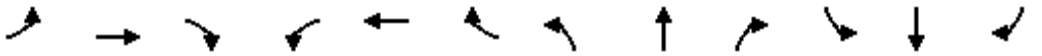
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	13	135	1	340	6	434	124	311	493	17
Future Volume (vph)	40	1	13	135	1	340	6	434	124	311	493	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	90			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			351			1103			522	
Travel Time (s)		7.1			8.0			25.1			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	42.0	42.0		42.0	42.0		9.6	28.0		30.0	48.4	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		9.6%	28.0%		30.0%	48.4%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 15: (#11) TC-3 & TC-4 Dwy. & Roberts Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1	13	135	1	340	6	434	124	311	493	17
Future Volume (veh/h)	40	1	13	135	1	340	6	434	124	311	493	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	1	14	147	1	370	7	472	135	338	536	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	14	63	191	12	393	16	838	238	366	1766	59
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.01	0.31	0.31	0.41	1.00	1.00
Sat Flow, veh/h	526	39	180	410	35	1113	1781	2732	776	1781	3508	118
Grp Volume(v), veh/h	58	0	0	518	0	0	7	306	301	338	271	283
Grp Sat Flow(s),veh/h/ln	745	0	0	1558	0	0	1781	1777	1731	1781	1777	1849
Q Serve(g_s), s	0.0	0.0	0.0	27.4	0.0	0.0	0.4	14.4	14.6	18.0	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	32.2	0.0	0.0	0.4	14.4	14.6	18.0	0.0	0.0
Prop In Lane	0.74		0.24	0.28		0.71	1.00		0.45	1.00		0.06
Lane Grp Cap(c), veh/h	326	0	0	596	0	0	16	545	531	366	894	931
V/C Ratio(X)	0.18	0.00	0.00	0.87	0.00	0.00	0.44	0.56	0.57	0.92	0.30	0.30
Avail Cap(c_a), veh/h	350	0	0	630	0	0	91	545	531	454	894	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	22.2	0.0	0.0	31.1	0.0	0.0	49.3	29.0	29.1	28.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	12.1	0.0	0.0	18.4	4.1	4.3	18.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	13.7	0.0	0.0	0.3	6.7	6.6	7.7	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	43.1	0.0	0.0	67.7	33.2	33.4	47.6	0.7	0.7
LnGrp LOS	C	A	A	D	A	A	E	C	C	D	A	A
Approach Vol, veh/h		58			518			614			892	
Approach Delay, s/veh		22.5			43.1			33.7			18.5	
Approach LOS		C			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	35.2		39.8	5.4	54.8		39.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	25.5	23.5		37.5	5.1	43.9		37.5				
Max Q Clear Time (g_c+I1), s	20.0	16.6		6.8	2.4	2.0		34.2				
Green Ext Time (p_c), s	0.5	2.1		0.3	0.0	3.7		1.1				

Intersection Summary			
HCM 6th Ctrl Delay		29.2	
HCM 6th LOS		C	

Oak Valley Town Center Project

Addendum to the Summerwind Ranch at Oak Valley Environmental Impact Report

SCH No. 2004061035

Attachment F

Vehicle Miles Traveled Memorandum

September 2020

Memorandum

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

Date: September 24, 2020

To: Bonnie Johnson
City Manager
City of Calimesa

From: Andrea Bitterling

Subject: Oak Valley Town Center Vehicle Miles Traveled

HELIX Project: HVE-02

Message:

An amendment is proposed to the previously approved Summerwind Ranch at Oak Valley Specific Plan (Summerwind Ranch) addressing an approximately 244-acre portion of the Summerwind Ranch project, referred to as the Oak Valley Town Center (OVTC). The proposed amendment would decrease business park land uses within the site from 121.1 to 119.6 acres, a decrease of approximately 1.5 acres. Proposed uses would include approximately 2,250,000 square feet (SF) of business park uses, or approximately 671,000 SF more than the 1,579,000 SF assumed in the original environmental impact modeling for the approved Specific Plan. Commercial land uses would increase from 86.0 to 88.7 acres, an increase of approximately 2.7 acres. This area would accommodate approximately 751,800 SF of commercial retail uses, or approximately 74,600 SF more than the 677,200 SF assumed in the original environmental impact modeling for the approved Specific Plan.

The Summerwind Ranch Project Environmental Impact Report (EIR) (State Clearinghouse No. 2004061035) was certified by City Council in 2005. Subsequent to certification of the EIR, California Senate Bill (SB 743) resulted in replacement of the level of service (LOS) metric previously used for transportation impact analysis with a new metric, known as vehicle miles traveled (VMT), effective July 1, 2020. As addressed in a separate memorandum, CEQA lead agencies have the discretion to determine that a VMT analysis is not required for subsequent environmental review. Nonetheless, for informational purposes, the amount of VMT for the OVTC project was compared to the suite of land uses allowed under the current Specific Plan for the portion of the Summerwind Ranch project on the same site.

CEQA Guidelines Section 15064.3 defines VMT as “the amount and distance of automobile travel attributable to a project.” This type of information was available at the time the Summerwind Ranch EIR was certified. Frequently Asked Questions Regarding the Proposed Updates to the CEQA Guidelines issued by OPR in 2017 stated, “Vehicle miles traveled is already used in CEQA to study other potential

impacts such as greenhouse gas, air quality, and energy impacts and is used in planning for regional sustainable communities strategies." More specifically, the Air Quality Impact Analysis for Summerwind Ranch (circulated as Appendix B of the EIR) included modeling that specifically considered both the number and anticipated distance of vehicle trips. Based upon the information provided in the EIR, VMT could have been extrapolated. While the specific methods for the measurement and evaluation of VMT have been updated and become more sophisticated, this analysis relies on the type of information that was available at the time of EIR certification for comparison purposes.

As noted above, the first element of the calculation of VMT is the amount of vehicle travel, or number of trips, generated by a project. The number of trips generated for the Summerwind Ranch and Oak Valley Town Center projects is based on the trip generation summary contained in the Trip Generation and Circulation Context for Oak Valley Town Center (Urban Crossroads 2020). That report specifies the number of passenger car and truck trips for the Oak Valley Town Center, but does not provide corresponding detail for the Summerwind Ranch project. Therefore, the breakdown of passenger cars versus truck trips associated with business park uses for the Summerwind Ranch project was determined based on the Summerwind Ranch Air Quality Impact Analysis (Urban Crossroads 2004).

The second element of the calculation of VMT is the distance that would be covered by each trip. Because the types of uses allowed in each land use category under the Summerwind Ranch or Oak Valley Town Center would be the same, the same trip lengths were used for both scenarios. Specifically, a trip length of 5.941879 miles was used for retail, a trip length of 12 miles was used for business park cars, and a trip length of 40 miles was used for business park trucks. The trip length for retail uses is based on default values from the California Emission Estimator Model (CalEEMod), Version 2016.3.2 (see attached for details of calculations). The trip length for business park uses reflects recent, conservative requirements for modeling of warehouse uses based on guidance from the South Coast Air Quality Management District.

The resulting calculations of VMT based on the above-described trip generation rates and trip lengths are provided in Table 1.

Table 1
Vehicle Miles Traveled Comparison

	Summerwind Ranch			**Oak Valley Town Center**		
Land Use	Retail	Business Park		Retail	Business Park	
Vehicle Type	Cars	Cars	Trucks	Cars	Cars	Trucks
Trips	31,515	17,810	1,403	28,380	4,970	2,361
Trip Length (miles)	5.941879	12	40	5.941879	12	40
VMT	187,258	213,725	56,102	168,631	59,640	94,440
Total VMT	**457,086**			**322,711**		
VMT Difference	**134,375 (29%) Reduction**					

Based on the inputs described above, the Summerwind Ranch land uses that were proposed on the Oak Valley Town Center site would result in 457,086 total VMT, while the proposed Oak Valley Town Center land uses would result in 322,711 total VMT, for a decrease of 134,375 VMT, or approximately 29 percent.

TABLE 4: PREVIOUS SUMMERWIND RANCH SP TRIP GENERATION SUMMARY

Previous Summerwind Ranch SP Trip Generation Rates[1]									
Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Business Park (419 TSF)	770	419.0 TSF	1.180	0.230	1.410	0.300	1.010	1.310	12.530
Business Park (469 TSF)	770	469.0 TSF	1.180	0.220	1.400	0.300	1.000	1.300	12.340
Business Park (691 TSF)	770	691.0 TSF	1.170	0.220	1.390	0.290	0.970	1.260	11.830
Commercial Retail (26 TSF)	820	26.0 TSF	1.640	1.050	2.690	4.750	5.150	9.900	108.820
Commercial Retail (196 TSF)	820	196.0 TSF	0.730	0.470	1.200	2.390	2.590	4.980	53.660
Commercial Retail (455 TSF)	820	455.0 TSF	0.520	0.330	0.850	1.800	1.940	3.740	39.960

Previous Summerwind Ranch SP Trip Generation Results[1]											
Planning Area	TAZ	Land Use	ITE LU Code	Quantity[2]	AM Peak Hour			PM Peak Hour			Daily
					In	Out	Total	In	Out	Total	
TC-1	S	Commercial Retail (196 TSF)	820	196.4 TSF	143	92	235	469	509	978	10,539
	T.1	Business Park (419 TSF)	770	75.5 TSF	89	17	106	23	76	99	946
		- Commercial Pass-By/Internal (20%)			*(29)*	*(18)*	*(47)*	*(94)*	*(102)*	*(196)*	*(2,108)*
		TC-1 Subtotal			**203**	**91**	**294**	**398**	**483**	**881**	**9,377**
TC-2	T.2	Business Park (419 TSF)	770	343.9 TSF	406	80	486	103	348	451	4,309
		TC-2 Subtotal			**406**	**80**	**486**	**103**	**348**	**451**	**4,309**
TC-3	P	Business Park (469 TSF)	770	468.6 TSF	553	103	656	141	469	610	5,783
	Q.1	Commercial Retail (455 TSF)	820	154.8 TSF	80	51	131	279	300	579	6,186
		- Commercial Pass-By/Internal (20%)			*(15)*	*(10)*	*(25)*	*(56)*	*(60)*	*(116)*	*(1,238)*
		TC-3 Subtotal			**618**	**144**	**762**	**364**	**709**	**1,073**	**10,731**
TC-4	Q.2	Commercial Retail (455 TSF)	820	300.4 TSF	156	99	255	541	583	1,124	12,004
	R	Business Park (691 TSF)	770	691.0 TSF	808	152	960	200	670	870	8,175
	U	Commercial Retail (26 TSF)	820	25.6 TSF	42	27	69	122	132	254	2,786
		- Commercial Pass-By/Internal (20%)			*(39)*	*(25)*	*(64)*	*(133)*	*(143)*	*(276)*	*(2,957)*
		TC-4 Subtotal			**967**	**253**	**1,220**	**730**	**1,242**	**1,972**	**20,008**
PREVIOUS SUMMERWIND RANCH SP TOTAL					**2,194**	**568**	**2,762**	**1,595**	**2,782**	**4,377**	**44,425**

[1] Source: Summerwind Ranch Traffic Impact Analysis (Final). Prepared by Urban Crossroads, Inc. March 2005.

[2] TSF = Thousand Square Feet

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Note: Internal trip capture is not discounted for the purposes of the VMT calculations. The distance of these shorter trips is factored into the trip length calculation.

Source: Urban Crossroads. 2020. Trip Generation and Circulation Context for the Oak Valley Town Center. September 5.

TABLE 2: PROPOSED OAK VALLEY TOWN CENTER PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Proposed Oak Valley Town Center Trip Generation Rates [1]									
Land Use	ITE LU Code	Quantity [2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Cold Storage Warehouse [3,4,5]	157	1,229.2 TSF	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.059	0.017	0.076	0.026	0.068	0.094	1.437
2-Axle Trucks (10.69% AM, 7.53% PM, 11.17% Daily)			0.009	0.003	0.012	0.003	0.006	0.009	0.237
3-Axle Trucks (3.39% AM, 2.39% PM, 3.54% Daily)			0.003	0.001	0.004	0.001	0.002	0.003	0.075
4-Axle+ Trucks (16.72% AM, 11.78% PM, 17.49% Daily)			0.014	0.004	0.018	0.004	0.010	0.014	0.371
High-Cube Parcel Hub Warehouse [3,4,5]	156	1,020.8 TSF	0.350	0.350	0.700	0.435	0.205	0.640	4.630
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.242	0.243	0.485	0.341	0.161	0.502	3.139
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.018	0.018	0.036	0.016	0.007	0.023	0.250
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.022	0.022	0.044	0.020	0.009	0.029	0.308
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.067	0.067	0.134	0.059	0.028	0.087	0.933
Shopping Center	820	751.8 TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75

Proposed Oak Valley Town Center Trip Generation Results										
Planning Area	Land Use	ITE LU Code	Quantity [2]	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
TC-1	High-Cube Parcel Hub Warehouse	156	620.3 TSF							
	- Passenger Cars			150	151	301	212	100	312	1,947
	- Truck Trips									
	2-axle:			*11*	*11*	*22*	*10*	*4*	*14*	*155*
	3-axle:			*14*	*14*	*28*	*12*	*6*	*18*	*191*
	4+-axle:			*42*	*42*	*84*	*37*	*17*	*54*	*579*
	- Net Truck Trips (Actual Vehicles)			67	67	134	59	27	86	925
	TC-1 Subtotal (Actual Vehicles) [6]			**217**	**218**	**435**	**271**	**127**	**398**	**2,872**
TC-2	High-Cube Parcel Hub Warehouse	156	400.5 TSF							
	- Passenger Cars			97	97	194	137	64	201	1,257
	- Truck Trips									
	2-axle:			*7*	*7*	*14*	*6*	*3*	*9*	*100*
	3-axle:			*9*	*9*	*18*	*8*	*4*	*12*	*123*
	4+-axle:			*27*	*27*	*54*	*24*	*11*	*35*	*374*
	- Net Truck Trips (Actual Vehicles)			43	43	86	38	18	56	597
	TC-2 Subtotal (Actual Vehicles) [6]			**140**	**140**	**280**	**175**	**82**	**257**	**1,854**
TC-3	High-Cube Cold Storage Warehouse	157	1229.2 TSF							
	- Passenger Cars			73	21	94	32	84	116	1,766
	- Truck Trips									
	2-axle:			*11*	*4*	*15*	*4*	*7*	*11*	*291*
	3-axle:			*4*	*1*	*5*	*1*	*2*	*3*	*92*
	4+-axle:			*17*	*5*	*22*	*5*	*12*	*17*	*456*
	- Net Truck Trips (Actual Vehicles)			32	10	42	10	21	31	839
	TC-3 Subtotal (Actual Vehicles) [6]			**105**	**31**	**136**	**42**	**105**	**147**	**2,605**
TC-4	Commercial Retail	820	751.8 TSF	436	271	707	1,376	1,489	2,865	28,380
	- Commercial Pass-By/Internal (10%)			*(35)*	*(35)*	*(70)*	*(143)*	*(143)*	*(286)*	*(2,838)*
	TC-4 Subtotal			**401**	**236**	**637**	**1,233**	**1,346**	**2,579**	**25,542**
TOTAL EXTERNAL TRIPS (ACTUAL VEHICLES)				**863**	**625**	**1,488**	**1,721**	**1,660**	**3,381**	**32,873**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017) and 10th Edition Supplement (2020).
ITE LU 156 = High-Cube Parcel Hub Warehouse (Warehouse/Distribution); ITE LU 157 = High-Cube Cold Storage Warehouse (Warehouse/Distribution); ITE LU 820 = Shopping Center (Commercial Retail)
For ITE 157, AM/PM peak hour (in/out) splits are estimated from ITE 154 (High-Cube Transload & Short-Term Storage Warehouse)

[2] TSF = Thousand Square Feet

[3] Vehicle Mix Source: Institute of Transportation Engineers (ITE) Trip Generation Handbook, Third Edition (September 2017).

[4] Vehicle Mix Source: Institute of Transportation Engineers (ITE) High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).

[5] Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks

[6] Total Net Trips (Actual Vehicles) = Passenger Cars + Net Truck Trips (Actual Trucks).

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Source: Urban Crossroads. 2020. Trip Generation and Circulation Context for the Oak Valley Town Center. September 5.

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	43.17	50.78	436.35	1.31	230.37
Multi-Family Attached	16.90	19.50	167.55	0.50	88.46
Elementary school	2.92	2.47	20.61	0.06	11.24
Middle School	4.16	4.07	33.92	0.10	18.50
Strip mall	61.01	69.75	586.84	1.68	297.89
Office park	31.93	35.59	307.42	0.91	159.54
TOTAL EMISSIONS (lbs/day)	160.09	182.16	1,552.69	4.57	806.01

Includes correction for passby trips.
Includes a double counting reduction for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Temperature (F): 60 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Single family housing	9.57 trips / dwelling units	2,381.00	22,786.17
Multi-Family Attached	6.72 trips / dwelling units	1,302.00	8,749.44
Elementary school	0.96 trips / students	1,200.00	1,152.00
Middle School	1.58 trips / students	1,200.00	1,896.00
Strip mall	43.92 trips / 1000 sq. ft.	1,000.00	43,918.67
Office park	10.68 trips / 1000 sq. ft.	1,579.00	16,863.72

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	15.0	3.0	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	15.0	3.0	6.0	10.3	5.5	5.5
Trip Speeds (mph)	40.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Middle School				20.0	10.0	70.0
Strip mall				2.0	1.0	97.0
Office park				48.0	24.0	28.0

Source: Urban Crossroads. 2004. Summerwind Ranch Air Quality Impact Analysis. November 12.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Source: HELIX Environmental Planning. 2020. Supplementary Air Quality Analysis for the Oak Valley Town Center Project. September 16.

Retail Trip Length

Primary Trips

Trip Type	Trip Length (miles)	% of Trips
C-W	16.6	16.30%
C-C	8.4	64.70%
C-NW	6.9	19%
Primary Trip Average Trip Length		9.4516

Diverted Trips

Percent of Primary Trip Length	25%
Diverted Trips Average Trip Length	2.3629

Pass-by Trips

Pass-by Trips Average Trip Length	0.1

Total Average Trip Length

Trip Type	Trip Length (miles)	% of Trips
Primary	9.4516	54%
Diverted	2.3629	35%
Pass-by	0.1	11%
Overall Average Trip Length		**5.941879**

Summerwind Ranch/Oak Valley Town Center
Comparison of Vehicle Miles Traveled

	Summerwind Ranch*				Oak Valley Town Center			
Land Use Type	Retail	Business Park		Total	Retail	Business Park		Total
	Cars	Cars	Trucks		Cars	Cars	Trucks	
		92.70%	7.30%					
Trips	31515	17810	1403		28380	4970	2361	
Trip Length	5.941879	12	40		5.941879	12	40	
VMT	187,258	213,725	56,102	**457,086**	168,631	59,640	94,440	**322,711**

Difference (Summerwind Ranch - OVTC)= **134,375**
Percent Reduction **29%**

*This does not include the entirety of Summerwind Ranch commercial uses, but only the area analyzed in the current Addendum.