Draft
Environmental Impact Report

SCH# 2025071048

Volume 6

Appendix I through Appendix L

Discovery Solar PV and Storage Project

Discovery Solar PV and Storage Project by Discovery Solar Storage, LLC (PP24408); ZCC No. 56, Map 197; ZCC No. 71, Map 198; ZCC No. 29, Map 214; ZCC No. 16, Map 215; CUP No. 22 Map 197; CUP No. 47, Map 198; CUP No. 50, Map 214; CUP No. 51, Map 214; CUP No. 19, Map 215; ZV No. 20, Map 197; ZV No. 36, Map 198; ZV No. 15, Map 214; ZV No. 3, Map 215; GPA No. 18, Map 197 (Circulation); GPA No. 5, Map 198 (Circulation); GPA No. 10, Map 214 (Circulation); GPA No. 7, Map 215 (Circulation); Multiple Vesting Tentative Parcel Maps (VTPM)

Kern County
Planning and Natural Resources Department
Bakersfield, California

January 2026

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Appendices—Volume 6

NOTE TO REVIEWER OF ELECTRONIC FILES:

To assist you in reviewing this electronic document, "bookmarks" and/or "links" have been provided for easier navigation between sections. When available, bookmarks are located in the panel to the left. Links are highlighted in **BLUE** in the Table of Contents. Clicking on either the bookmarks or links will take you to the selected item. This document may consist of multiple linked PDF files. If saving this document to your computer, you must save all corresponding files to a directory on your hard drive to maintain the manner in which these PDF documents are linked.

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Appendix I
Hydrology Study

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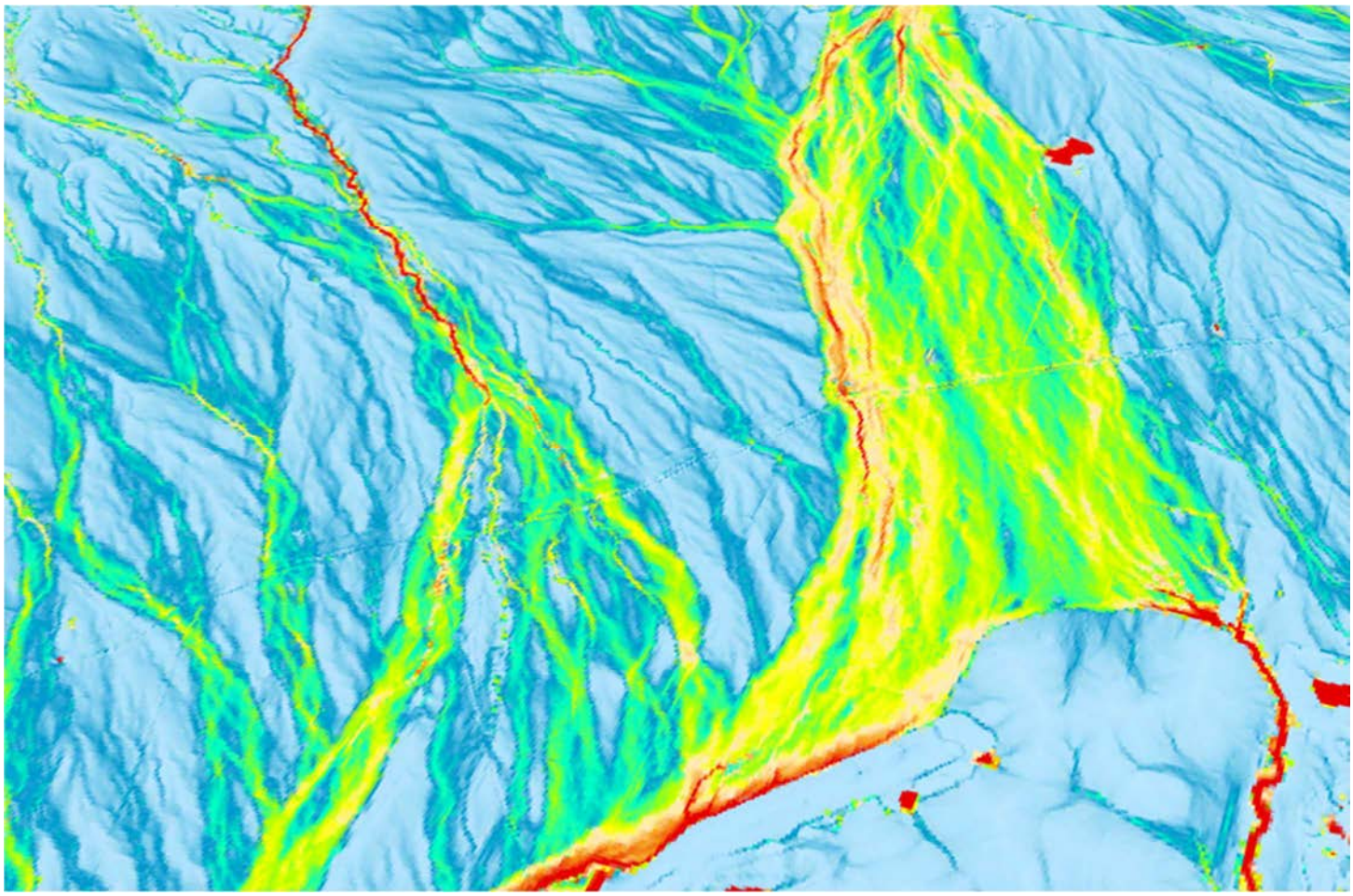

PRELIMINARY HYDROLOGY STUDY

Discovery Solar PV and Storage Project

Kern County, California

AUGUST 28, 2025

PREPARED FOR:

Discovery Solar PV and Storage, LLC

PREPARED BY:

Westwood

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Westwood

Preliminary Hydrology Study

Discovery Solar PV and Storage Project

Kern County, California

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Revision Date 0: May 17, 2024

Westwood

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Executive Summary

The purpose of this study is to analyze and review the existing hydrology of the Discovery Solar PV and Storage Project (Project or Site) and any impacts that the hydrology may play in the design of the proposed Project with battery energy storage capacity. This report was prepared to be used in the design and layout of the Project and is intended for submittal to reviewing agencies for stormwater permitting.

The Project includes development of a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 1,400 megawatts (MW) of renewable electrical energy with up to 8 gigawatt-hours of energy storage capacity (approximately 1,000 MW) on an approximately 7,700-acre Project site in an unincorporated area of southeastern Kern County, California (Figure 1). PV solar panels, a power collection system, including medium-voltage lines that connect the solar facilities, inverters, a switchyard, foundations, and transformers will be installed onsite. Associated Project infrastructure includes an operations and maintenance facility, telecommunication facilities, energy storage system(s),up to three onsite collector substations, interconnection and transmission systems, and temporary laydown yards. The Project may be constructed in multiple phases.

The Project will interconnect to the existing Windhub Substation, which is owned and operated by Southern California Edison (SCE). The interconnection will be via a newly constructed 230-kilovolt (kV) generation tie line (gen-tie) that will extend north from the Project site towards the Windhub Substation from on-site collector substations. A portion of the Project 230-kV gen-tie would be co-located within an existing gen-tie corridor (controlled by the Applicant and/or its affiliates). A high-voltage switchyard located immediately north of the Union Pacific Railroad (UPRR) rail line will also be constructed.

The Project is located in an unincorporated area in southeastern Kern County, on generally undeveloped and privately owned land, along the northern edge of the Antelope Valley. The Project site is located approximately 6 miles southwest of the unincorporated community of Mojave, approximately 9 miles southeast of the city of Tehachapi, and approximately 8 miles northwest of the unincorporated community of Rosamond. State Route (SR)-58 is north of the Project site, SR-14 is east of the Project site, and Tehachapi Willow-Springs Road runs between the Project site's boundaries (Figure 1). A network of existing named and unnamed dirt roads traverses the Project site. While the Los Angeles Department of Water and Power (LADWP) aqueduct roughly bisects the Project site, it is not included within the Project site (Figures 2 and 3). On-site, adjacent, and nearby land uses include renewable energy development, rural residential development, livestock grazing, heavy industrial and mining uses, and undeveloped lands. Elevations across the Project site are relatively flat, ranging from approximately 2,520 to 2,750 feet above mean sea level. The Project site is located within the U.S. Geological Survey (USGS) Monolith, Willow Springs, and Soledad Mountain 7.5-Minute Topographic Quadrangle Maps.

The Project should utilize low-impact development techniques to provide post-construction stormwater management. The proposed retention basins throughout the Project site will provide both runoff treatment and reduction when compared to existing conditions.

The 100-year analysis shows low water depths and low velocities (Exhibits 7 through 8A) across the majority of the Site. Higher flood depths exist within the creeks and their surrounding areas located within and adjacent to the Site. There are also higher flood depths located in multiple washes throughout the Site. The 100-year flood depths show a large central portion of the site is heavily impacted by the 100-year runoff with depth, velocity, and scour. There are also a few scattered low-lying areas with localized ponding. Minimal velocities and scour are expected on Site due to the flat terrain. In addition to the 100-year storm event, the 10-year, and 5-year, 24-hour storm events were analyzed (Exhibits 12-15). These analyses showed similar flood patterns to those of the 100-year, 24-hour analyses, but with variation relative to their magnitudes.

Based on experience with similar projects, the majority of the Project site is suitable for the planned development by avoiding or designing to areas of high flood depths.

This report and the attached figures indicate the extent of modeled flood flows. This report should not be used to determine the extent of USACE, RWQCB, or CDFW jurisdiction, as the modeled flows do not provide relevant information regarding OHWM or other defining features for aquatic resources. A separate aquatic resources delineation will be prepared for this purpose.

1.0 Data Sources

Table 1 – Data Sources

Task	Format	Source	Use
Elevation	1-meter DEM	2018 California SoCal Wildfires	FLO-2D Model Elevations
Crop Data	Shapefile	USDA 2013 Crop Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design Storms
HUC-12 Drainage Boundary	Shapefile	USGS	Define Model Extents
Site Boundary	EdSan 3 Outlines for JT Counts.kmz	Discovery Solar PV and Storage, LLC	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference
FEMA Flood Zones	PDF; Shapefile	FEMA	Reference

2.0 Coordinate System

Table 2 – Coordinate System Used

Projection	State Plane Coordinate System
Zone	California Zone 5 (FIPS 405)
Datum	NAD83
Planar Units	Feet (U.S. Survey)

3.0 Existing Conditions

3.1 Project Location

The Project Site is approximately 7,700 acres and is located within Kern County, California (Exhibit 1). The Project Site is located approximately 60 miles north of Los Angeles, California, with the nearest town being Mojave in Kern County, California. Mojave is located 8 miles northeast of the Project (Exhibit 1).

The Project is located in an unincorporated area in southeastern Kern County, on generally undeveloped and privately owned land, along the northern edge of the Antelope Valley. The Project site is located approximately 6 miles southwest of the unincorporated community of Mojave, approximately 9 miles southeast of the city of Tehachapi, and approximately 8 miles northwest of the unincorporated community of Rosamond. State Route (SR)-58 is north of the Project site, SR-14 is east of the Project site, and Tehachapi Willow-Springs Road runs between the Project site's boundaries (Figure 1). A network of existing named and unnamed dirt roads traverses the Project site. While the Los Angeles Department of Water and Power (LADWP) aqueduct roughly bisects the Project site, it is not included within the Project site (Figures 2 and 3). On-site, adjacent, and nearby land uses include renewable energy development, rural residential development, livestock grazing, heavy industrial and mining uses, and undeveloped lands. Elevations across the Project site are relatively flat, ranging from approximately 2,520 to 2,750 feet above mean sea level. The Project site is located within the U.S. Geological Survey (USGS) Monolith, Willow Springs, and Soledad Mountain 7.5-Minute Topographic Quadrangle Maps.

3.2 Watershed Hydrology

The modeled watershed area encompasses approximately 105 square miles that generally slopes to the south and east. There are multiple creeks and washes that flow through the Project site. Oak Creek flows north to south through the middle of the Project site. There are multiple other unnamed creeks and washes that flow throughout the modeled watershed. The west portion of the modeled watershed flows typically towards the south and the east portion of the modeled watershed typically flows to the east.

3.3 Onsite Conditions

The Project is mainly located with the Oak Creek and Tropico Hill HUC 12 Boundaries. The western portion of the Site generally drains south, and the eastern portion of the Site generally drains south before either flowing southeast or southwest around Cactus Queen Mine. Many portions of the Project Site receive offsite flows and these drainage areas can become quite large in some cases. The Site is relatively flat with slopes of less than 2% though there are locations where the slopes reach roughly 5%.

US Fish and Wildlife Service National Wetlands Inventory (NWI Wetlands) provides information on the distribution of US wetlands (Exhibit 3). The NWI Wetlands dataset is not all-inclusive and other wetlands not shown may exist. A separate Aquatic Resources Delineation Report has been prepared for the Project; wetland locations included in this study are for general information only and remain subject to confirmation. The landcover on the Project site is primarily chaparral - narrowleaf (Exhibit 5) and has soils that primarily belong to Hydrologic Soil Groups (HSG) A and C (Exhibit 4). Typically, A soils are Sands and C soils are Clay Loams. Soils belonging to Hydrologic Soil Group C exhibit low infiltration rates; therefore, standing water will be slow to infiltrate during and after storm events when compared to soils belonging to Hydrologic Soil Groups A or B.

The main potential hydrologic issues on Site are flooding and erosive velocities.

3.4 Delineated Flood Zones

FEMA has completed a study to determine flood hazards for the selected location; the Project is covered by FIRM panels 06029C3650E, 06029C3675E, and 06029C3275E (Appendix C). The Project site contains areas of FEMA Zone A flood hazards (Exhibits 3 and 7). There is one FEMA Zone A Flood hazard onsite and is located through the middle of the Project site. A FEMA Zone A flood hazard is a 100-year flood hazard with no defined base flood elevation. No preliminary or pending FEMA changes are proposed within the Project site.

There are no California Department of Water Resources (DWR) Floodplain Awareness zones located onsite (Exhibits 3 and 7). The Floodplain Awareness zones are identified areas of all pertinent flood hazard areas that are not mapped under FEMA's National Flood Insurance Program. The Awareness maps identify the 100-year flood hazard areas using approximate assessment procedures. No buildings are intended to be placed within a 100-year flood hazard area. However, any structure(s), solar facilities or related appurtenances that are within the 100-year flood hazard area, such as, but not limited to, the solar array or inverter skid facilities, will need to be elevated above the 100-year flood with proper freeboard in order to not impede or redirect flood flows.

4.0 Proposed Conditions

4.1 Proposed Conditions

The majority of the proposed solar facility will consist of above ground mounted solar modules. The majority of the battery energy storage facilities would consist of the batteries being placed on top of concrete pads within a graveled pad. Natural desert landscaping should be restored below the modules and would make up the majority of the land cover. A small amount of impervious surface will be added from the gravel access roads, electrical equipment pads, and battery storage facilities. The Project should be designed to minimize grading and maintain

existing drainage patterns. No additional drainage shall be directed into any preserved Western Joshua Tree Woodland areas. The Project will meet all water quality standards or waste discharge requirements and will not substantially degrade water quality. A flood analysis of pre-development and post development depths may need to be completed once civil design is finalized for permitting purposes.

4.2 Post-Construction Stormwater Management

A desktop review of Kern County revealed a number of specific county requirements. The Kern County Hydrology Manual (KCHM) (Appendix E) needs to be followed for the design and modeling. The County has their own set of curve numbers and landcover that are to be used. The Project will not deplete or interfere with groundwater recharge. The FLO-2D model also needed to be calibrated to match the results from the CivilD results (Appendix D). The Kern County Development standards will also need to be incorporated into the design. As the Project design advances the post-construction stormwater management should be reviewed in further detail with the County Engineer. The Project will not substantially alter the existing drainage patterns of the Site or area that will result in substantial erosion, siltation, or increase the rate of surface runoff. The Project will not deplete or interfere with groundwater recharge.

4.3 Kern County Hydrology (CivilD)

CivilD modeling software was used to calculate flow rates and confirm that the FLO-2D model was providing results consistent with the Kern County methods (Appendix E). A point (Exhibit 10) was selected to calibrate the results of the FLO-2D model. This location works reasonably well as a calibration point because it is similar to watersheds that contribute to the Project site and is relatively concentrated. Inputs to CivilD were calculated following guidance in the KCHM and modeling inputs/outputs can be found in Appendix D. The peak flow rate for the calibration watershed using CivilD was 133.68 cfs. Table 5 below shows the inputs into the CivilD model.

Table 3 – CivilD Calibration Watershed Inputs

Description	Equation	Unit	Value
Watershed Area	Calculated in GIS	Square Mi	0.17
Watershed Area	Conversion	Acres	111
100-Year Aerial Reduction	Figure E-4	Unitless	1
Watershed Area with Reduction	Aerial Reduction*Area	Acres	111
Equation	Lag-24n(l*lca/sqrt(s))^0.38	Hours	0.81
Basin Factor	KCHM Page 156 (n)	Unitless	0.065
Longest Watercourse	Calculated in GIS (l)	Miles	1.14
Length to Centroid	Calculated in GIS (lca)	Miles	0.64
Upstream Elevation	From 1-m offsite DTM	Feet	4,170
Elevation at Concentration	From 1-m offsite DTM	Feet	3,700
Difference in Elevation	Upstream – Downstream (H)	Feet	470
Slope along Watercourse	Slope (s)	FT/Mi.	412
Average CN for Watershed (Appendix B)	CN=	Unitless	89

5.0 FLO-2D Modeling

5.1 FLO-2D Modeling Overview

FLO-2D is a physical process model that routes rainfall runoff and flood hydrographs over flow surfaces or in channels using the dynamic wave approximation to the momentum equation. FLO-2D offers advantages over 1-D models and unit hydrograph methods by allowing for breakout flows and visualization of flows across a potential site. The primary inputs are a DTM (elevation data), curve numbers, and precipitation. No culverts were included in the model; all roadways and berms were assumed to overtop.

A FLO-2D model with 50-foot grid cells was utilized to model the watershed within and directly impacting the Project Site.

5.2 Elevation Data

The elevation data input into the FLO-2D model was 1-meter DEM data from 2018 California SoCal Wildfires (Exhibit 6). This data was exported as a single digital terrain model (DTM), which is read directly into FLO-2D.

5.3 Watershed Soils and Land Cover

USDA-NRCS SSURGO soil data provides soil types within the Project site and full coverage of the contributing watershed. Soils are primarily classified as Hydrologic Soil Groups (HSG) A and C within the Project site (Exhibit 4). Land cover was obtained from the USDA 2013 Crop Data Layer and calibrated to the Kern County

Hydrology Manual standards. Exhibit 5 displays the land cover classes for the entire watershed. Curve numbers were applied to each grid cell in the FLO-2D model based on intersecting the grid with the curve numbers (Exhibit 6).

5.4 Precipitation

Due to the variance in rainfall patterns throughout the watershed, a spatially varied rainfall pattern based on Atlas 14 rainfall data was utilized for the FLO-2D Analysis. What this means is that each grid cell within the FLO-2D models was assigned a location-specific rainfall depth for the specified storms. The 100-year 24-hour rainfall depths obtained from Atlas 14 for the entire watershed area varied from 4.11" – 9.62". The 10-year and 5-year 24-hour rainfall depths varied from 2.04" – 4.78" and 2.50" – 5.84", respectively. See Exhibit 11 for the spatially varied 100-year, 24-hour rainfall depths throughout the modeled watershed. All rainfall depths were distributed based on a site-specific nested Atlas 14 distribution pattern (Appendix A).

Precipitation data was downloaded from the NOAA Atlas 14 (Appendix A) and two different rainfall amounts were used depending on the analysis. Given the large change in rainfall for the modeled area it was determined to use rainfall values for CivilD based upon the location of the centroid of the calibrated watershed. The 100-year 24-hour storm for this event is 6.40 inches. Rainfall inputs were a site-specific nested Atlas 14 distribution pattern. A second location was determined to be more representative of the entire site and will be used for calculating the required basin storage for the Project. This location was taken from a central location of the Project site. The 100-year 24-hour rainfall amount is 5.11 inches (Appendix A).

5.5 CivilD

The FLO-2D model was calibrated to CivilD by decreasing the Manning's value and decreasing the CN from the standard inputs into the model. The Manning's values were applied to each grid cell in the FLO-2D model based on intersecting the grid with the soils. The rainfall distribution pattern used a site specific rainfall curve based on a central location for the Project site. The model results from the FLO-2D matched closely (<5%) the Kern County results providing assurances that the FLO-2D software was performing adequately.

Table 4 – Comparison of Modeling Methods at Calibration Points

Measurement	CivilD (Kern County)	FLO-2D
Volume (ac-ft)	48.36	46.00
Peak Flow (cfs)	133.68	135.87

6.0 On-Site Retention Requirements

6.1 Retention Requirements

Project development will require retention to mitigate the runoff from the new impervious surfaces, primarily panels, roads, and associated infrastructure. The proposed basins will retain runoff from as much of the site as feasible through the use of berms and swales. Runoff generated from the panels, access roads, and associated infrastructure will be allowed to disperse and infiltrate before being retained by onsite basins. At this design the retention volume is approximated based off anticipated impervious coverage. The Kern County basin requirements are typically more restrictive than the state of California. Given the large difference in rainfall across the Project site a central location was chosen for the rainfall value to be used for the basin sizing calculations (Appendix A). The proposed basins onsite will not be classified as a levee or dam and therefore propose less risk if failure would occur to people or structures.

Table 5 – Proposed Impervious Areas and Kern County Retention Calculations

Site	10-Yr, 5-day Rainfall Depth (in)	Impervious Cover (%)*	Drainage Area (ac)**	Retention Volume Required (ac-ft)	Anticipated Retention Volume Required (ac-ft)
Total Area	4.7	1.0	7,700	30.2	TBD

* The impervious cover % is based on previous Kern County projects

**The drainage area is the area of the Project site.

The design volume for the retention basins is calculated Engineering Bulletin 11-02 of the Kern County Development Standards (KCDS). The runoff volume from the ISDD five-day storm is calculated as:

Retention Basin Volume (ac-ft) = $[(D10yr\text{-}5day)/12](a_i)(Area) = 30.2$ ac-ft

Where,

D10 =10-Yr, 5-day depth of rainfall (in) = 4.7 inches

a_i=average percentage of impervious area = 1.0%

Area= Drainage area of total development = 7,700 acres

7.0 Flood Analysis Results

7.1 Existing Conditions Flood Analysis

The analysis shows low to moderate water depths and low velocities (Exhibits 7 through 8A) across the majority of the Project site. During a 100-year storm, the flood depths across the majority of the Project site are less than 0.5 feet with velocities less than 1 foot/second, with the exception of creeks and washes where the depths can exceed 6.0 feet. The central portion of the Project site has flow depths around 0.5-2.0 feet that is distributed in an alluvial pattern. The 100-year flood depths show a large central portion of the Project site is heavily impacted by the 100-year runoff with depth, velocity, and scour. See Table 6 below for a breakdown of flood depths within the Project site. The Project site is not at risk of inundation by seiche, tsunami, or mudflow.

The 10-year and 5-year, 24-hour storm analysis shows low water depths and low velocities across the majority of the Site (Exhibits 12 through 15). The 10-year and 5-year, 24-hour storm events show similar flooding patterns as the 100-year, 24-hour storm but the extents of the flooding are decreased due to the decrease in rainfall volumes.

Table 6 – Flood Depths Onsite

Peak Flow Depth (ft)	Percentage of Project site Covered by 100-year Peak Flow Depths	Percentage of Project site Covered by 10-year Peak Flow Depths	Percentage of Project site Covered by 5-year Peak Flow Depths
0.00 - 0.49	76.8%	88.2%	92.6%
0.50 - 1.00	11.7%	8.9%	6.0%
1.01 - 1.50	7.2%	1.9%	0.9%
1.51 - 2.00	2.8%	0.5%	0.3%
2.01 - 2.50	0.7%	0.2%	0.1%
2.51 - 3.00	0.3%	0.1%	0.0%
3.01 - 4.00	0.2%	0.1%	0.1%
4.01 - 6.00	0.2%	0.1%	0.0%
6.01+	0.1%	0.0%	0.0%

See Exhibits 7 through 8A and 12 through 15 for areas within the Project site with higher flood depths and velocities.

7.2 Scour

Minimal scour is expected onsite (Exhibit 9). The middle of the Project site along with the drainages onsite have higher potential for scour onsite. The scour depths calculated for this Project are based on HEC-18 Pier Scour Equations of a 6-inch-wide pile perpendicular to flow. Scour calculations consist of local scour only with unarmored soils and pile bases to provide the conservative local scour results. These scour results do not account for general, rill, or gully scour.

8.0 CEQA Hydrology and Water Quality Assessment

CEQA Section 15382 defines a significant effect on the environment as a substantial or potentially substantial adverse change in any of the physical conditions with the area affected by a project for all environmental resources. This assessment depicts potential impacts the Project may have on the environment, drainage patterns, and flood hazards areas.

1. *Would the project violate any water quality standards or waste discharge requirements?*

The Project will follow all applicable laws and regulations for water quality standards or waste discharge requirements. The Project will, at a minimum, meet water quality standards and waste discharge requirements by implementation of permanent and temporary stormwater controls. The Project will implement temporary stormwater control during construction of the Project which will substantially reduce or eliminate any water quality impacts.

2. *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

The Project is not anticipated to adversely affect the local groundwater sources. A separate Water Supply Assessment is being completed by another party for the Project and may include an analysis of both on-site and off-site well sources. The Project will introduce a limited amount of impervious surfaces and will not interfere with groundwater recharge. Additionally, vegetation onsite has been selected that requires minimal watering which will further reduce water needed onsite.

3. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

The Project will not alter the courses of any streams or rivers. The Site has been designed to minimize grading in order to reduce the possibility for erosion or siltation onsite or offsite. The Project will also be subject to a stormwater pollution prevention plan (SWPPP) which will further reduce the issue of erosion and siltation impacts.

4. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

The Project will not alter the courses of any streams or rivers. However, with the addition of the proposed permanent stormwater basins it could result in slight alterations (decrease) in the volume and velocity of stormwater discharging from the Site. The basins in place will capture water and allow some of that water to infiltrate and would slow the water traveling through the Site. These basins will assist in, at a minimum, maintaining the current water quality and discharge rates and volumes onsite.

5. *Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

The Project will be capturing runoff from the added impervious area with the implementation of permanent stormwater control measures such as basins. These basins will be sufficient for capturing any increase that the added impervious area may have caused and will ultimately not increase runoff from the Project site, the basins are designed to not be exceeded during normal storm events. The Project site will not provide any substantial additional sources of polluted runoff.

6. *Would the project otherwise substantially degrade water quality?*

With the addition of the temporary and permanent stormwater control measures the Project will not substantially degrade water quality.

7. *Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

The Project does not involve housing and as such none will be placed within a 100-year flood hazard area.

8. *Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

No buildings are intended to be placed within a 100-year flood hazard area. Given that the design is still preliminary the layout may still change. Westwood recommends

avoiding flood hazards onsite. However, any structure(s), solar facilities or related appurtenances that are within the FEMA 100-year flood hazard area, such as, but not limited to, the solar array or inverter skid facilities, will need to be elevated above the 100-year flood with proper freeboard in order to not impede or redirect flood flows. With the size of the piles being relatively small compared with the wide FEMA zones it is anticipated that any changes in the flood hazard areas would be insignificant and no impediment or redirection of flood flows will occur.

9. *Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

There are no dams or levees upstream of the Project site. Additionally, the Project is not proposing any dams or levees so there would be no impact to people or structures from flooding as a result of the failure of a dam or levee.

10. *Would the project increase risk of inundation by seiche, tsunami, or mudflow?*

The Project is not located in a flood hazard zone for seiche, tsunami, or mudflow and will not increase risk with regard to these issues.

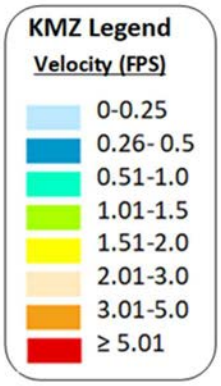
9.0 Recommendations

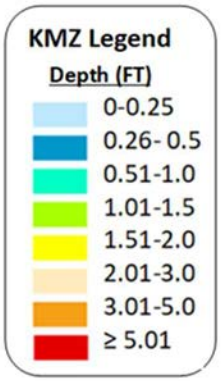
Based on experience on similar projects, the Project site is suitable for the planned development and hydrologic concerns can be addressed by either avoiding areas of high flood depths or through detailed engineering design.

10.0 Next Steps

1. Final engineering design should account for the flood depths and velocities presented in Exhibits 7-8A.
2. Facilities to be elevated 1' above the 100-year, 24-hour peak flood elevations.
3. Proposed facilities should avoid FEMA Flood Zones located onsite when possible or be designed to meet local, state, and/or federal requirements.
4. Stormwater management should be revisited to ensure the final design meets the local and state requirements.

11.0 Included Output Files





1. Shapefile of 100-Year Rain Event Flow Depth
   2024-05-10_DiscoverySolarStorage_PrelimFlowDepthatCell_100yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

2. Shapefile of 100-Year Rain Event Velocity
   2024-05-10_DiscoverySolarStorage_PrelimVelocityatCell_100yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Velocity (FPS)

3. Shapefile of 10-Year Rain Event Flow Depth
   2025-03-14_DiscoverySolarStorage_PrelimFlowDepthatCell_10yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

4. Shapefile of 10-Year Rain Event Velocity
   2025-03-14_DiscoverySolarStorage_PrelimVelocityatCell_10yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Velocity (FPS)

5. Shapefile of 5-Year Rain Event Flow Depth
   2025-03-14_DiscoverySolarStorage_PrelimFlowDepthatCell_5yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

6. Shapefile of 5-Year Rain Event Velocity
   2025-03-14_DiscoverySolarStorage_PrelimVelocityatCell_5yr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Velocity (FPS)

7. KMZ of FLO-2D Results
   2025-03-14_DiscoverySolarStorage_PrelimFLO-2D.kmz
   Overlay in Google Earth for graphical representation.

12.0 References Cited

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Exhibits

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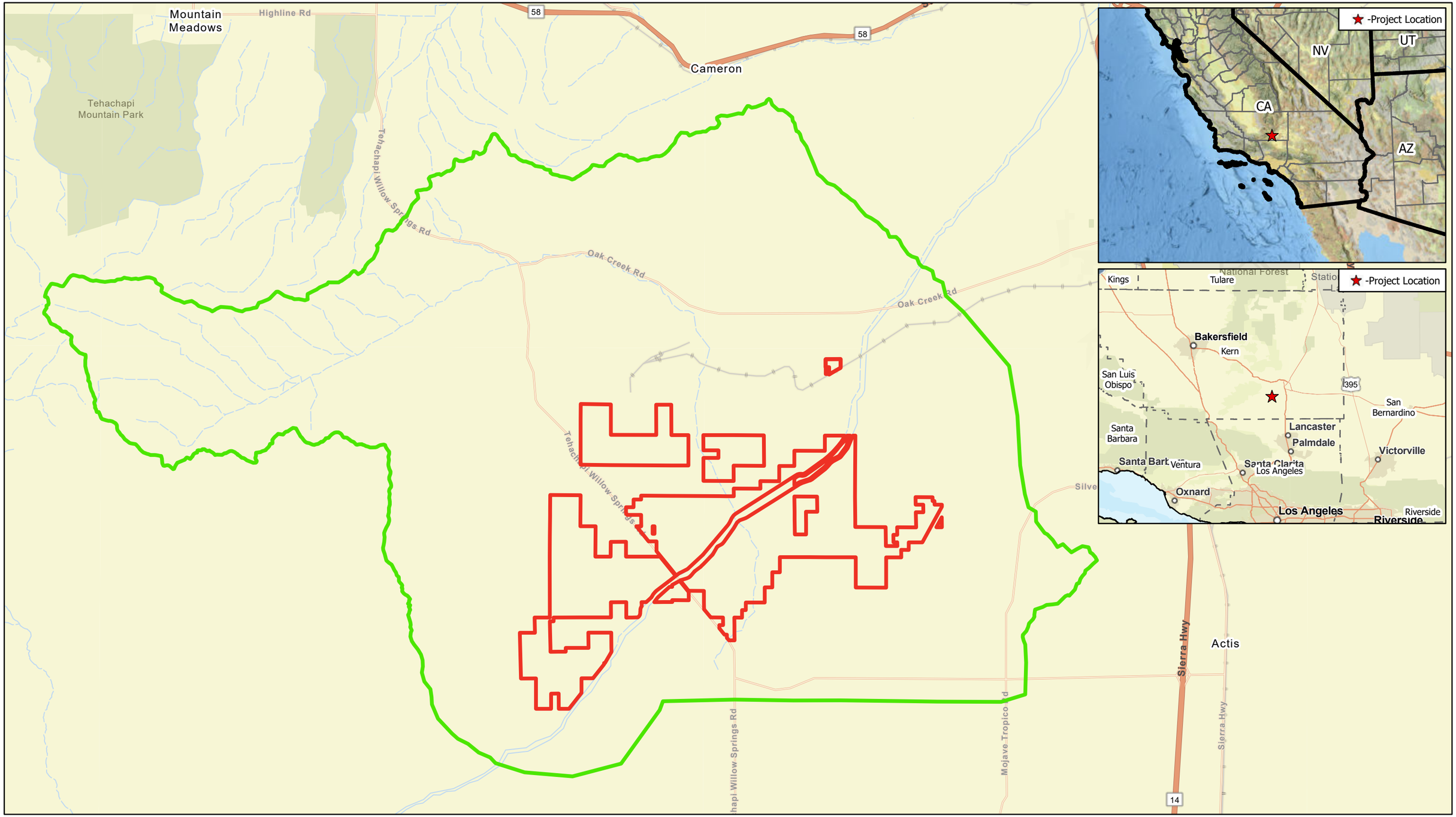

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary

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Kern County, California

N

0 1.5 Miles

Exhibit 1: Location Map

July 3, 2025

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Location Map - Location Map | 6/27/2025 12:07 PM | EBuhlend

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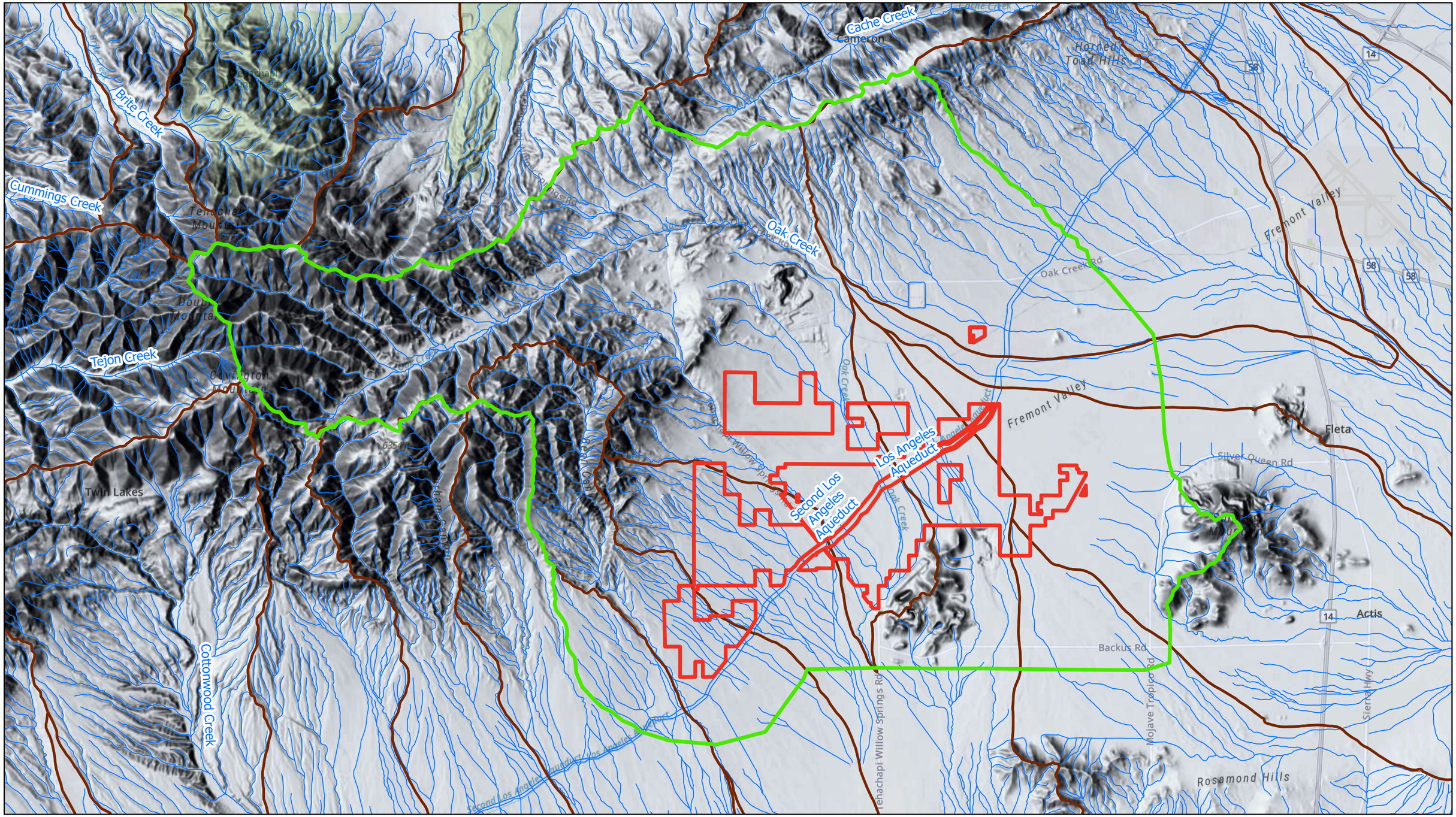

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- HUC-12 Boundary
- NHD Flowlines

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N

0 Miles 1.5

Exhibit 2: Base Hydrologic Map

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Base Hydrologic Map - Base Hydrologic Map | 6/27/2025 2:26:26 PM | EBurford

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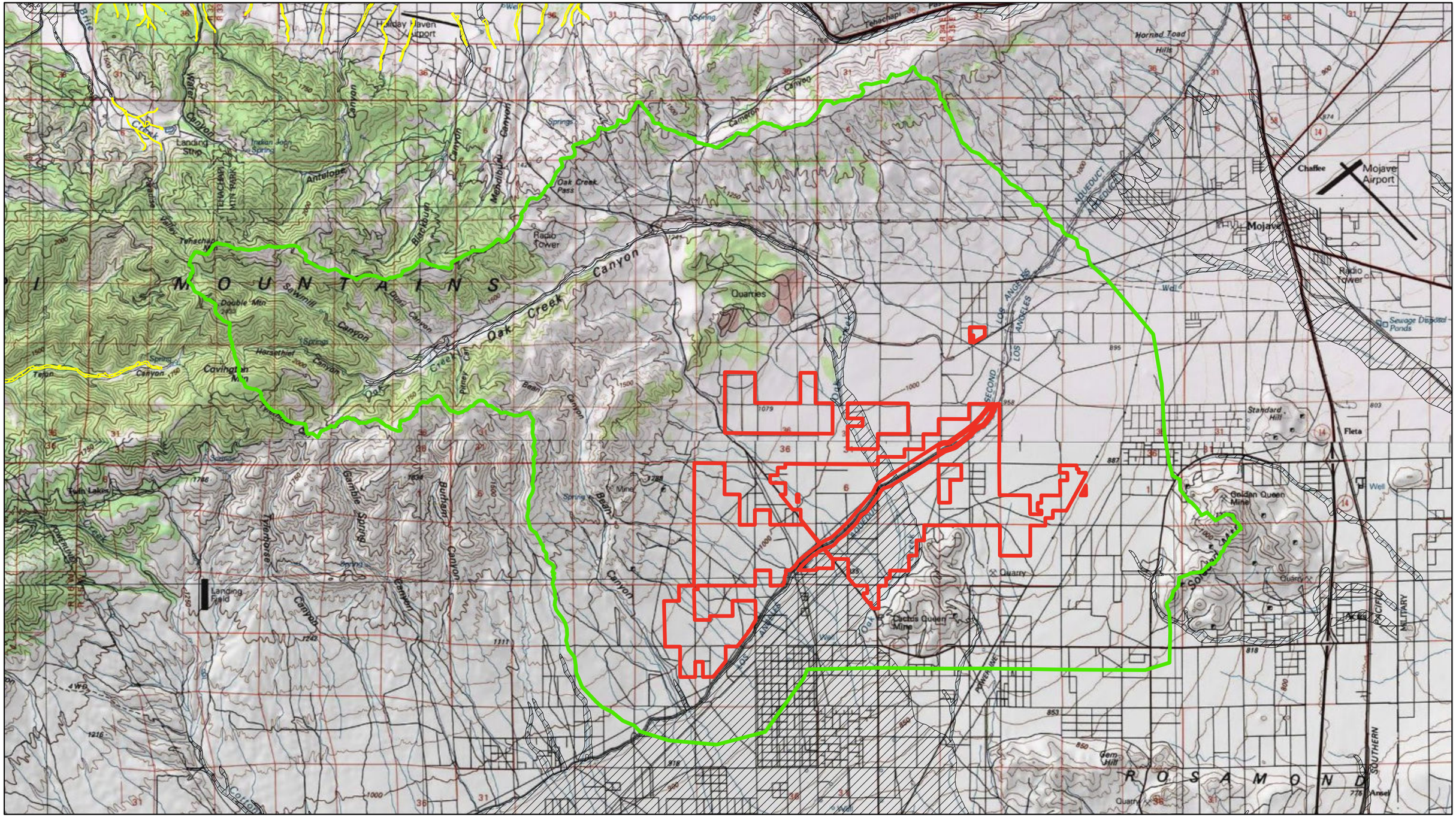

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- FEMA Zone AO
- CA DWR Flood Awareness
- NWI Wetlands

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Exhibit 3: USGS, FEMA, and NWI Wetlands Map

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N

0 Miles 1.5

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USGS, FEMA, and NWI Wetlands Map - USGS, FEMA, and NWI Wetlands Map | 6/27/2025 12:30 PM | EBurfeind

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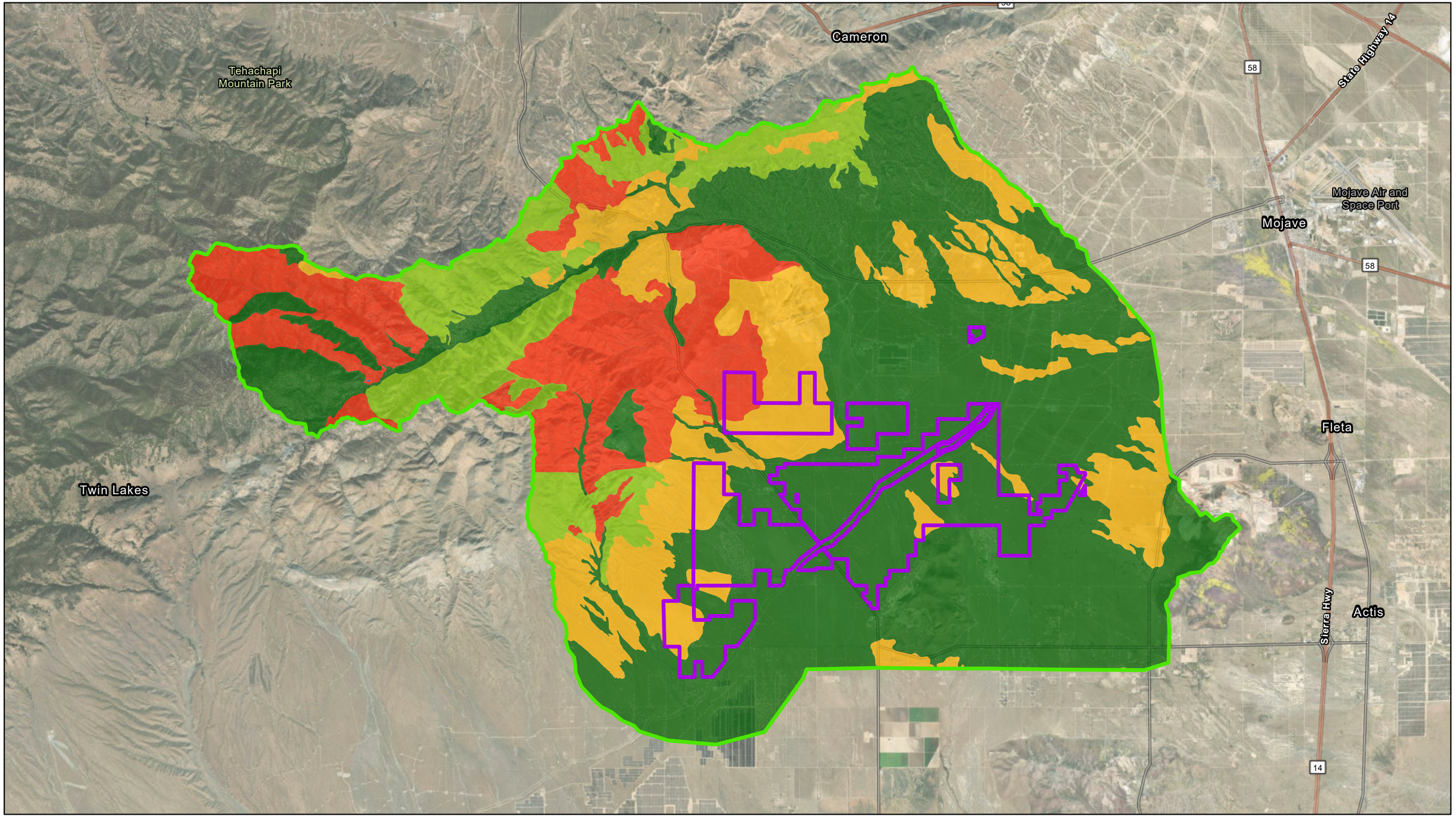

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary

Hydrologic Soils Group

- A
- B
- C
- D
- W

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N

0 1.5 Miles

Exhibit 4: Soils Map

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Soils Map - Soils Map | 6/27/2025 12:37 PM | EBuitendi

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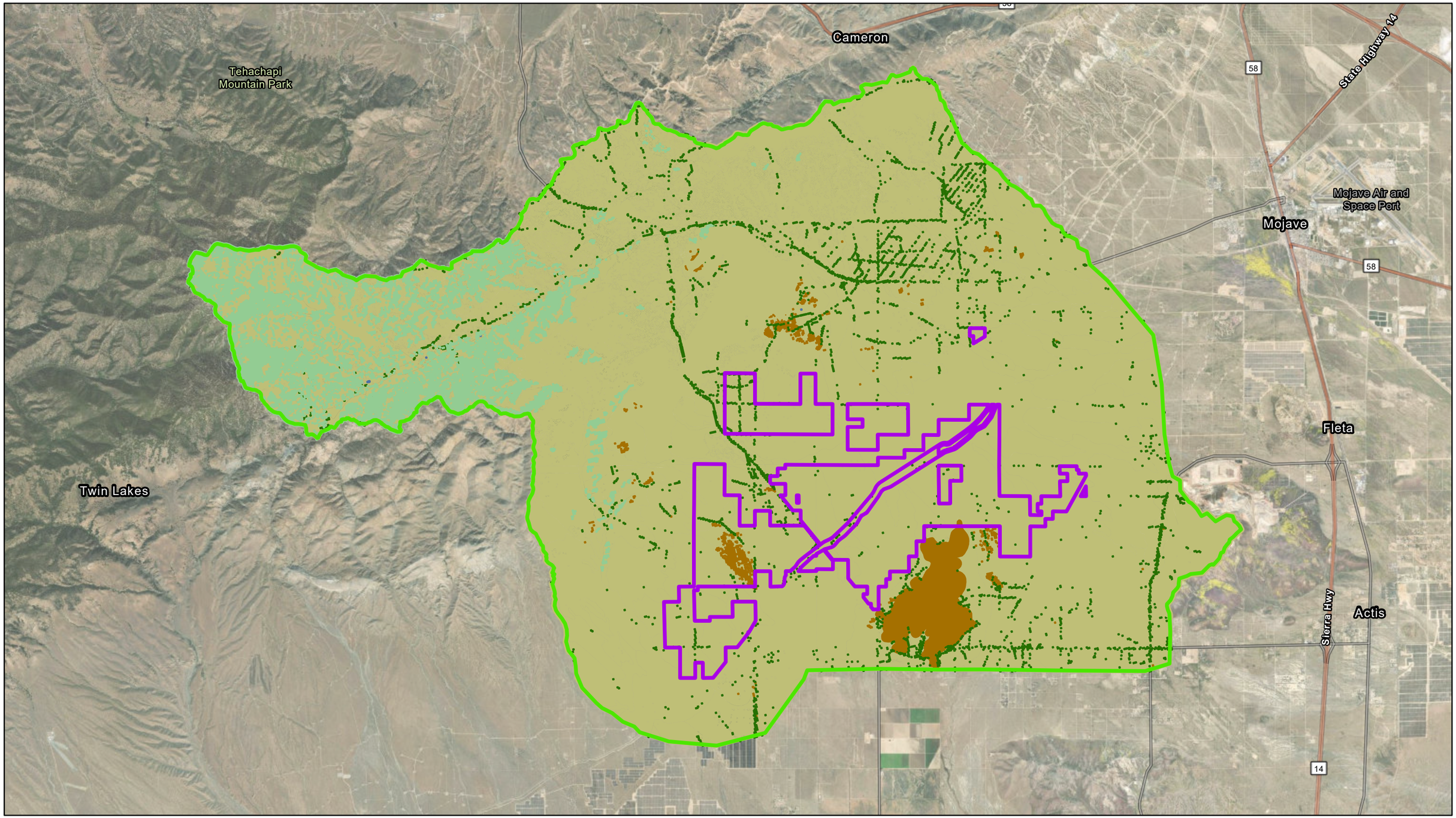

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary

Landcover

- Barren
- Chaparral- Narrowleaf
- Turf
- Water
- Woodland

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N

0 Miles 1.5

Exhibit 5: Landcover Map

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Landcover - Landcover | 6/27/2025 12:07 PM | EBurfeind

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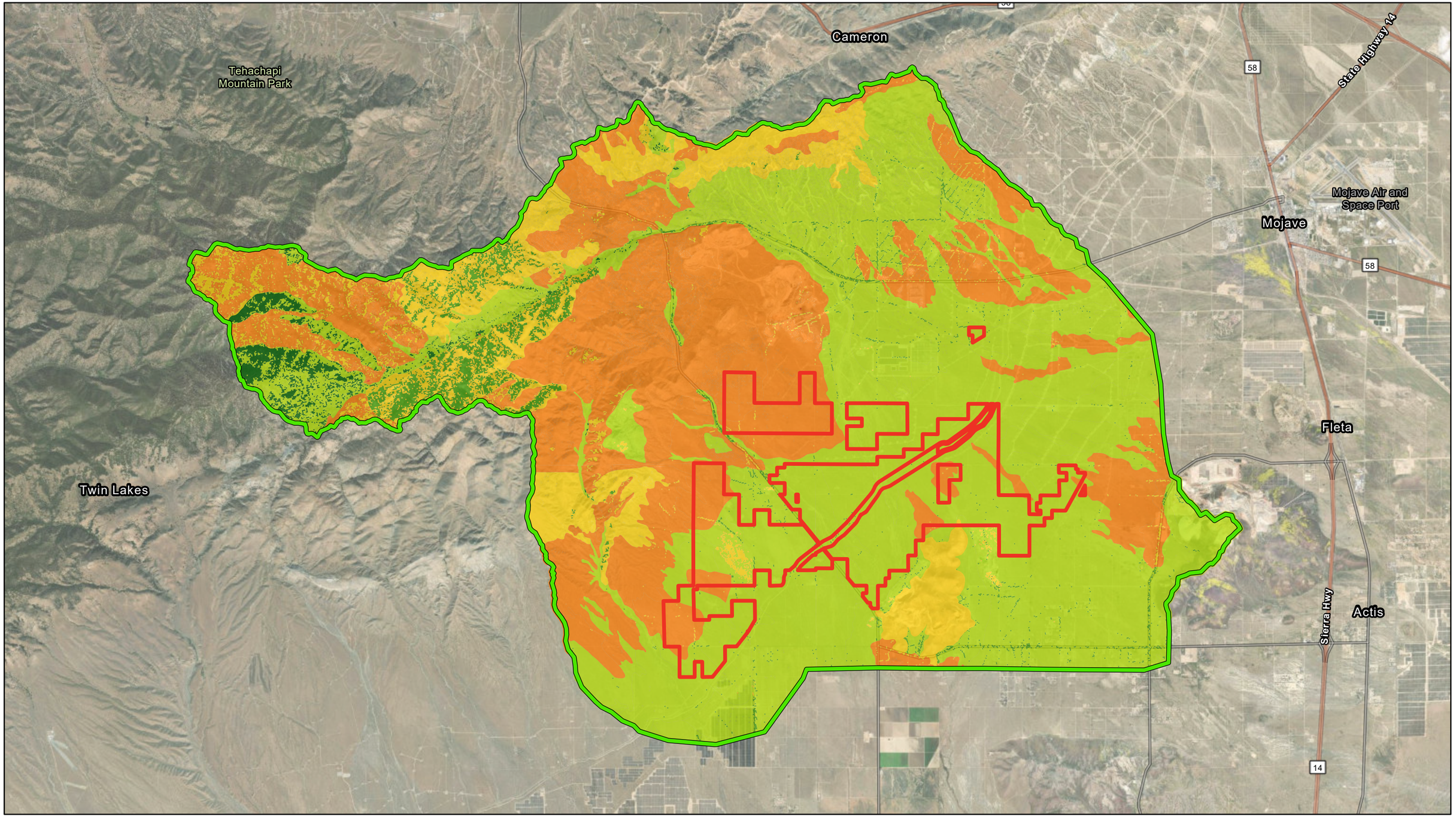

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 1-Meter Elevation Extents

Curve Number

- 40 - 49
- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99

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0 Miles 1.5

Exhibit 6: Curve Number and Topographic Source Map

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CN And Topo Sources - CN and Topo Sources | 6/27/2025 12:37 PM | EBarfield

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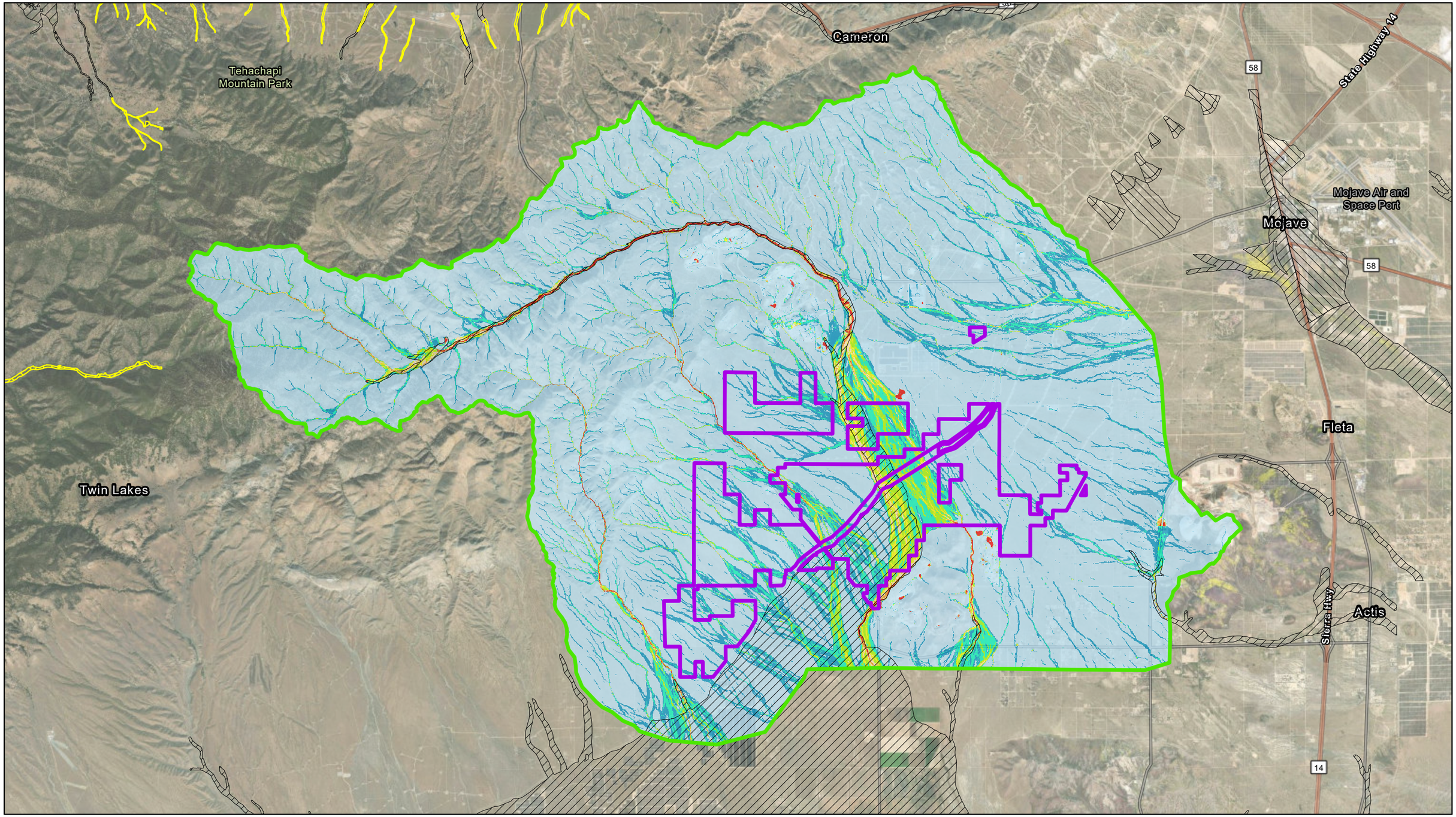

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- FEMA Zone AO
- CA DWR Flood Awareness

Max Water Depth (ft)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 1.5

Exhibit 7: 100-Year Max Water Depth Map

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100 Yr Max Water Depth Map - 100 Yr Max Water Depth | 6/27/2025 12:02 PM | EBerfield

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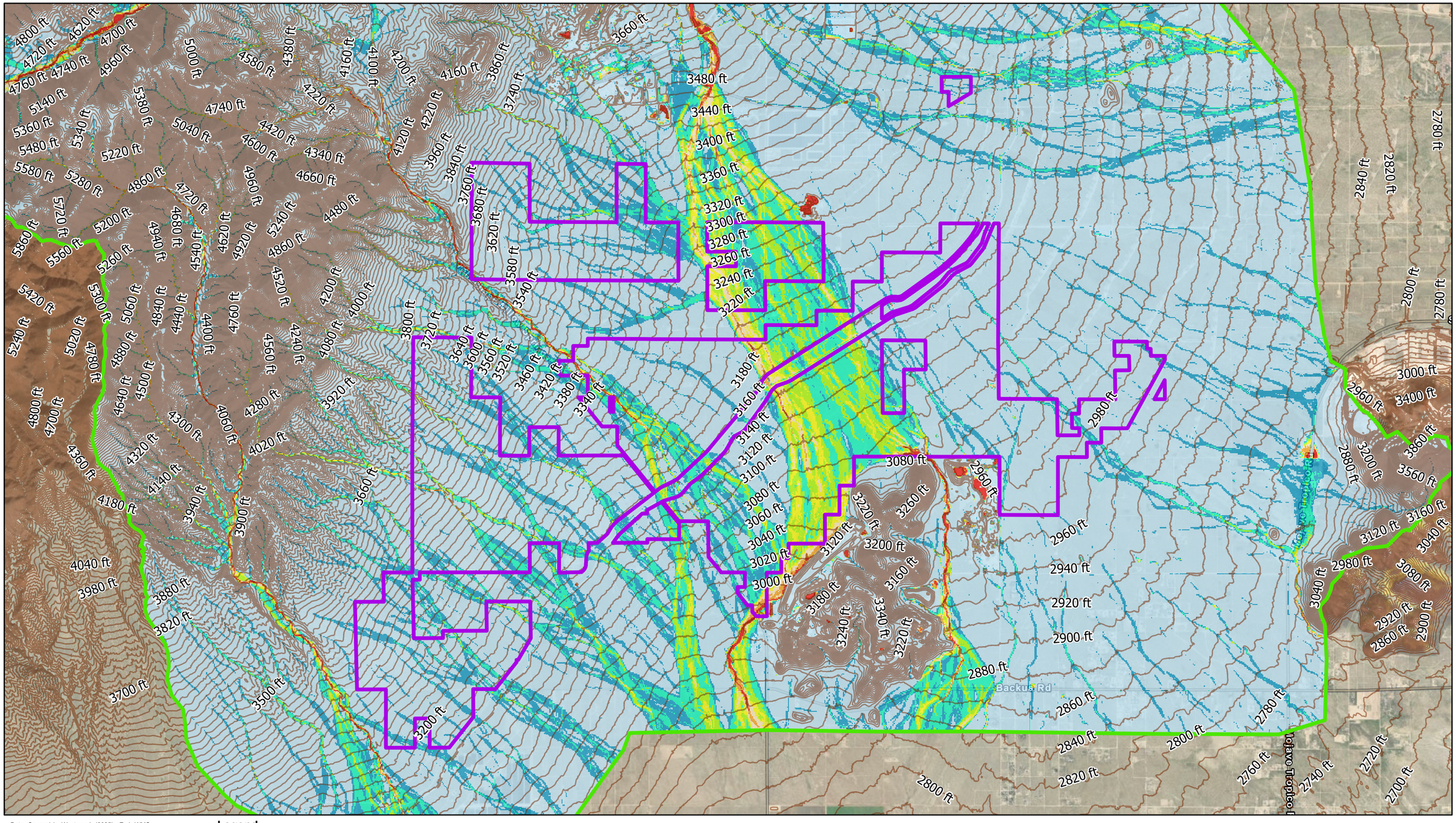

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Max Water Depth (ft)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 0.75

Exhibit 7A: 100-Year Max Water Depth Project Map

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100 Yr Max Water Depth Project Area.jpg - 100 Yr Max Water Depth Project Area | 6/27/2025 12:07 PM | ElizaReid

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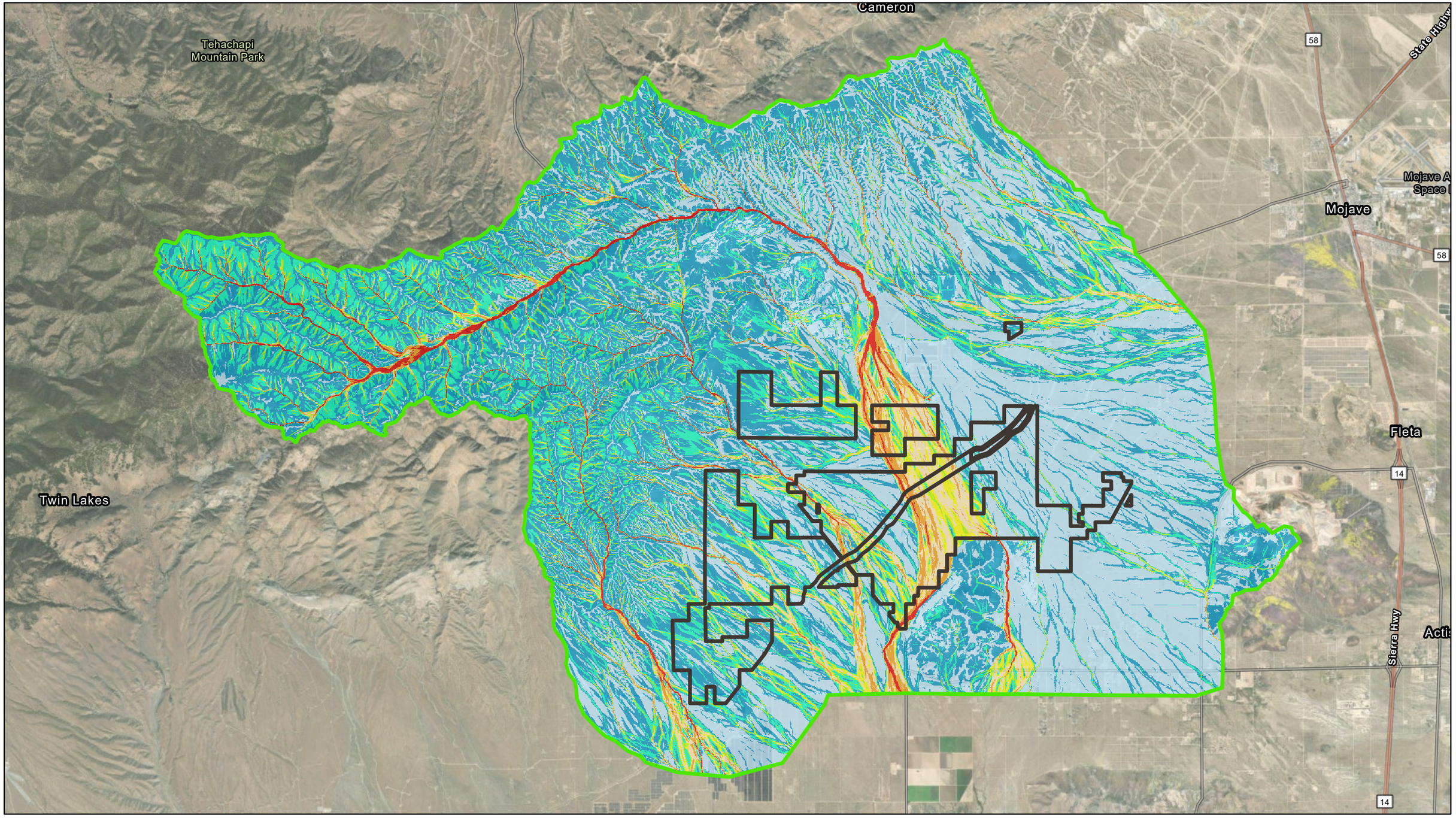

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

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Legend

- Project site
- FLO-2D Model Boundary
- County Boundary

Peak Velocity (fps)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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Kern County, California

N

0 Miles 1.5

Exhibit 8: 100-Year Peak Velocity Map

July 3, 2025

\\westwoodps.local\Global Projects\00368\2.03_GIS_Hydro\Exhibits\Discovery Solar PV and Storage Project\Discovery Solar PV and Storage Project.aprx
100 Yr Peak Velocity Map - 100 Yr Peak Velocity | 6/27/2025 12:01 PM | Esurfield

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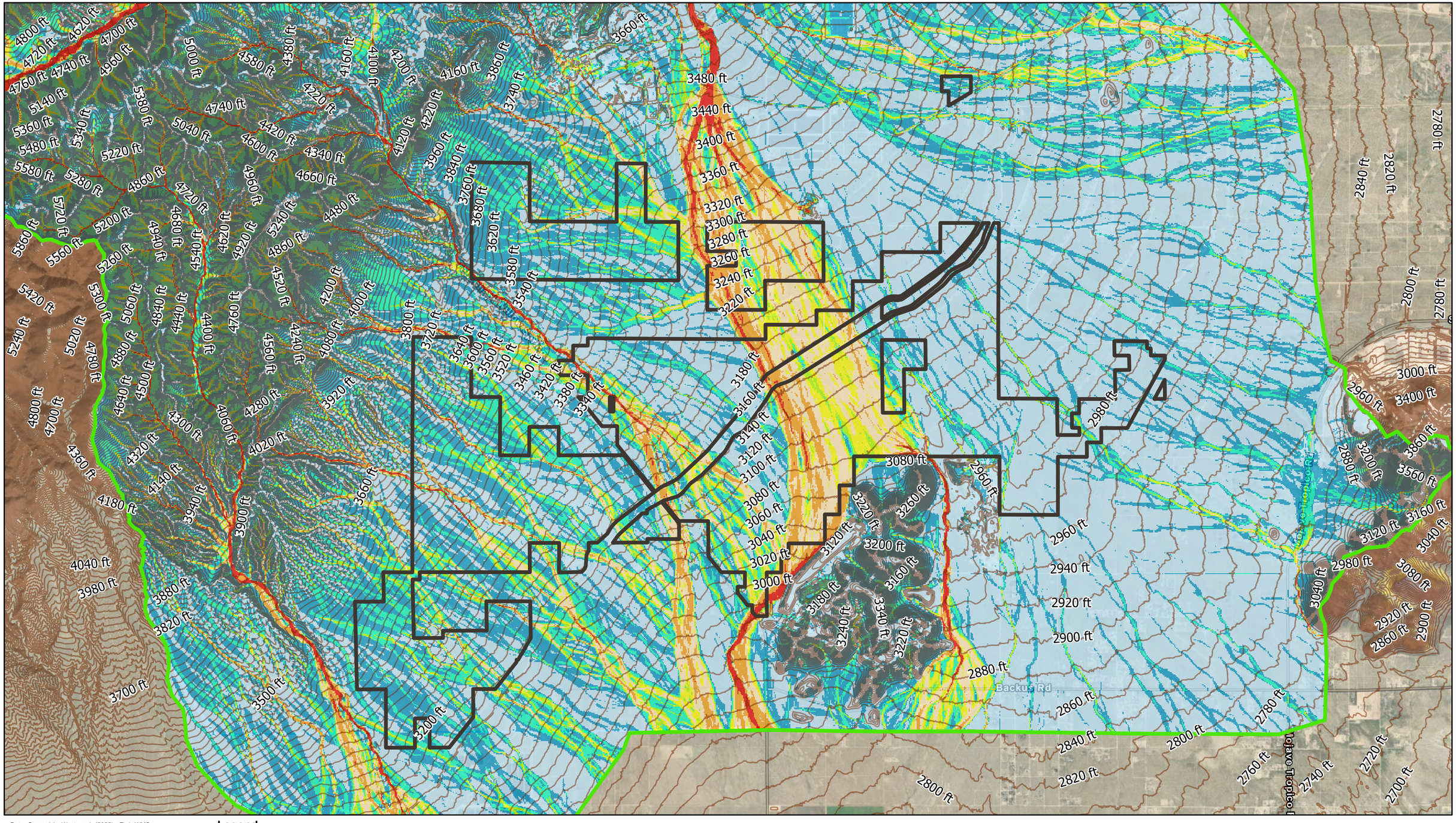

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Peak Velocity (fps)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 0.75

Exhibit 8A: 100-Year Peak Velocity Project Map

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100 YR Peak Velocity Project Area Map - 100 YR Peak Velocity Project Area | 6/27/2025 12:24 PM | ElliottEnd

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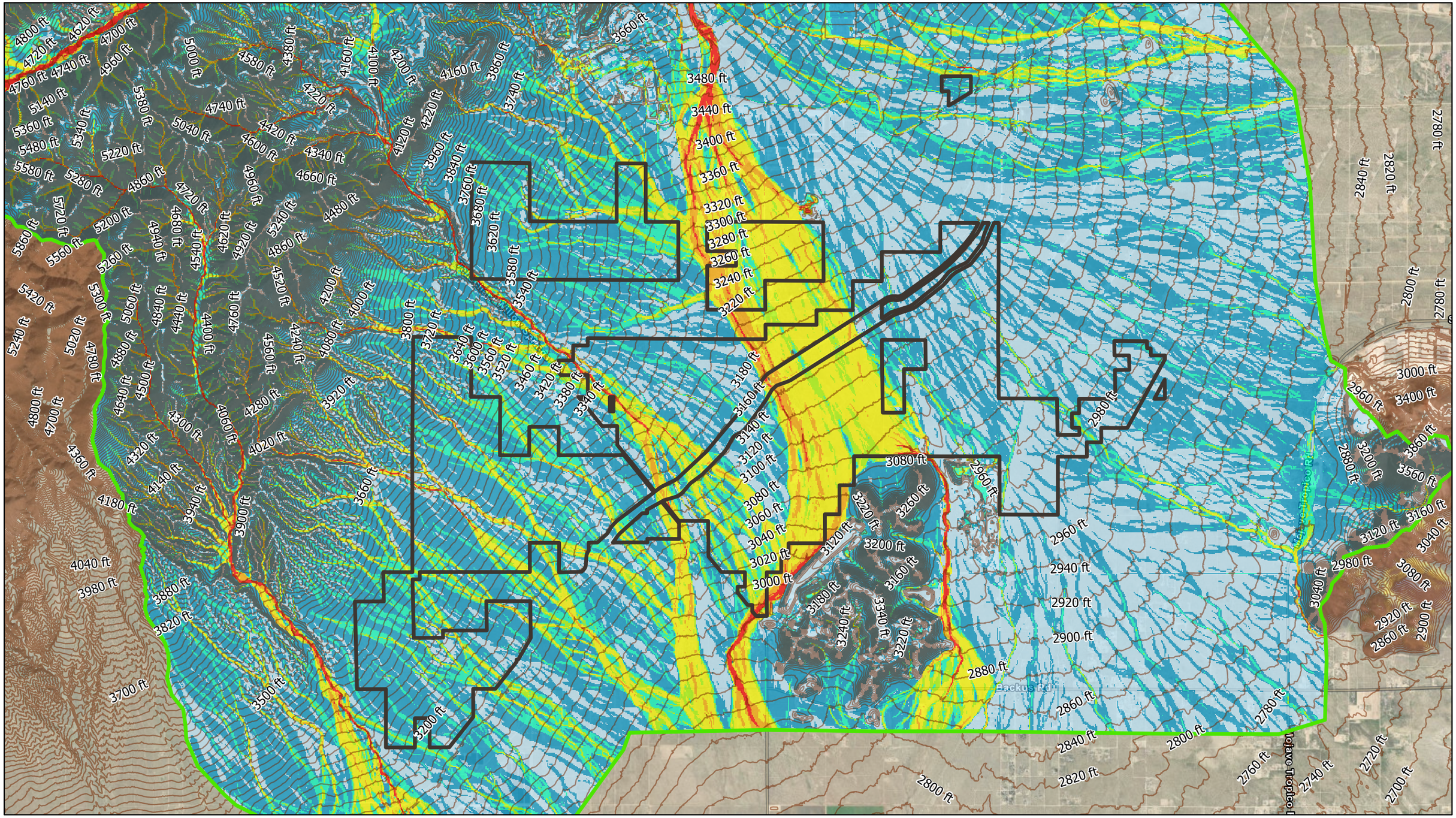

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours
- Scour (ft)
  - 0.00 - 0.25
  - 0.26 - 0.50
  - 0.51 - 0.75
  - 0.76 - 1.00
  - 1.01 - 1.50
  - 1.51 - 2.00
  - 2.01 +

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Exhibit 9: 100-Year Local HEC-18 Pier Scour Map

N

0 Miles 0.75

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100 YR Scour Map - 100 YR Scour | 6/27/2025 12:06 PM | EBuitenhuis

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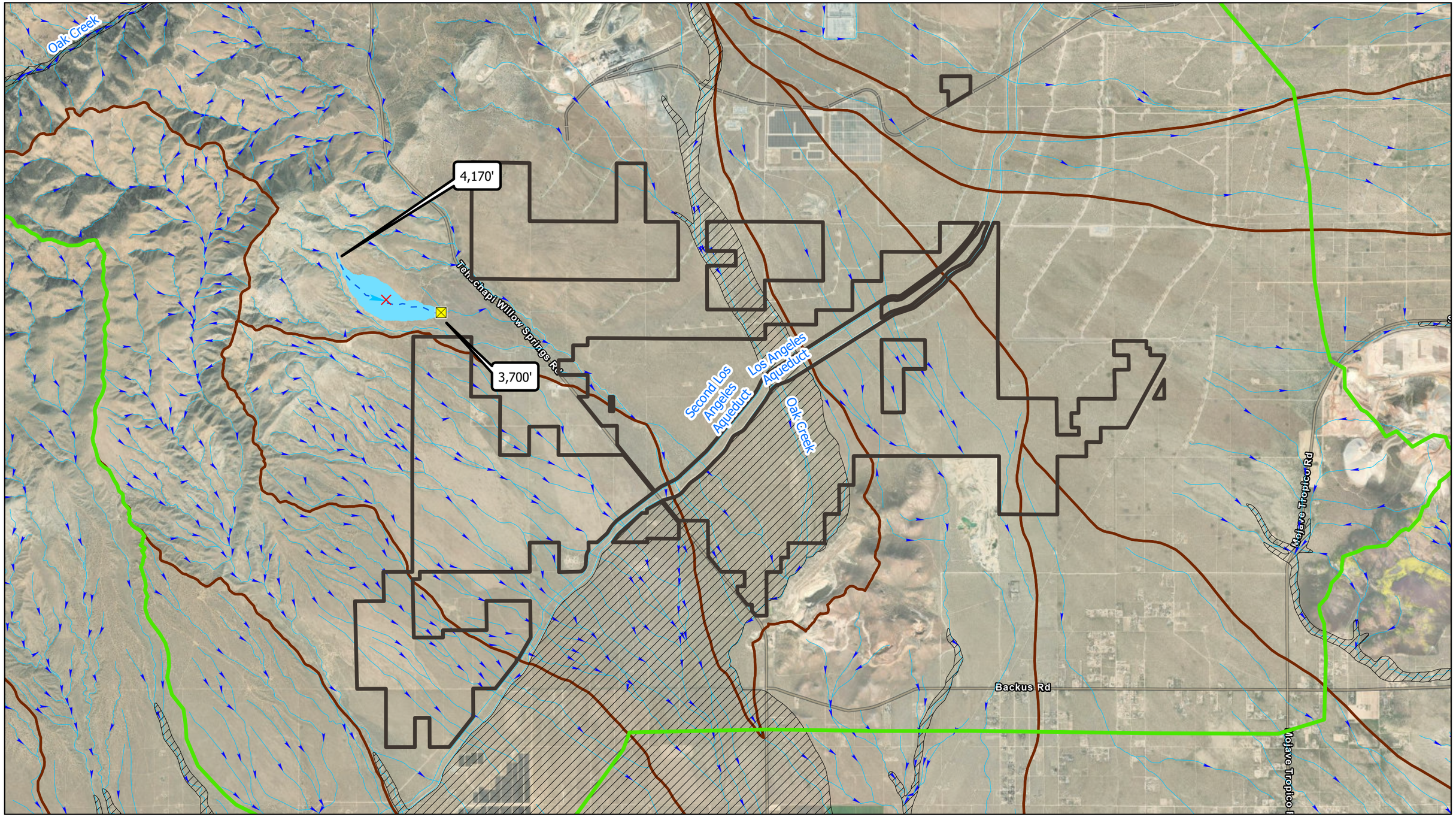

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- FEMA Zone AO
- CA DWR Flood Awareness
- Kern County Calibration Watershed
- HUC 12 Boundary
- NHD Flowline
- Calibration Point
- Watershed Centroid
- Longest Watercourse

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N

0 0.75 Miles

Exhibit 10: Kern County Hydrology Map

July 3, 2025

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Kern County Hydrology Map - Kern County Hydrology Map | 6/27/2025 12:02 PM | EBurfeind

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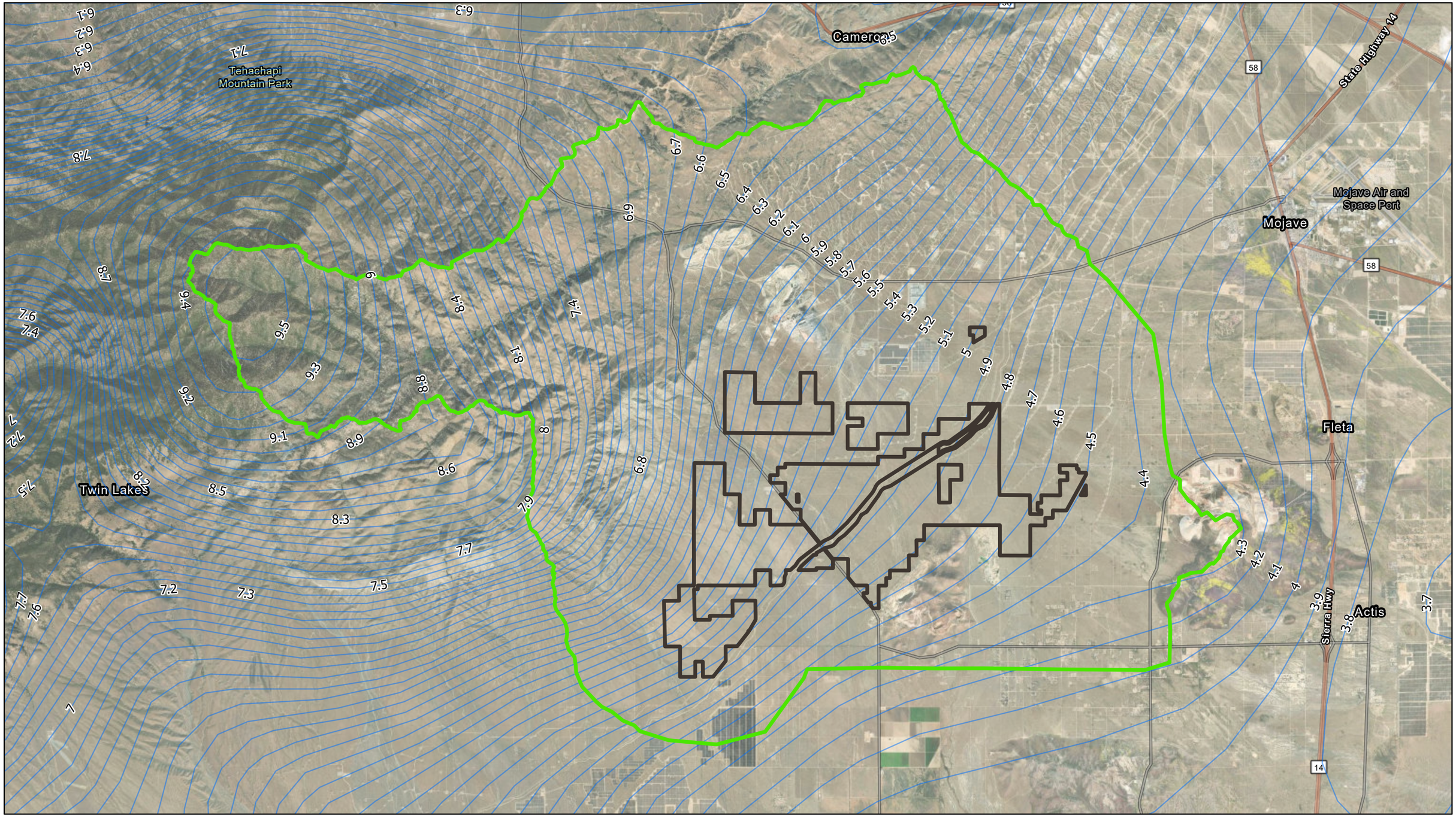

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 100-Year 24 Hour Rainfall Depth Contours - 0.1"

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N

0 Miles 1.5

Exhibit 11: Spatially Varied Rainfall Depth Map

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Spatially Varied Rainfall Depth Map - Spatially Varied Rainfall Depth Map | 6/27/2025 12:07 PM | EBehrens

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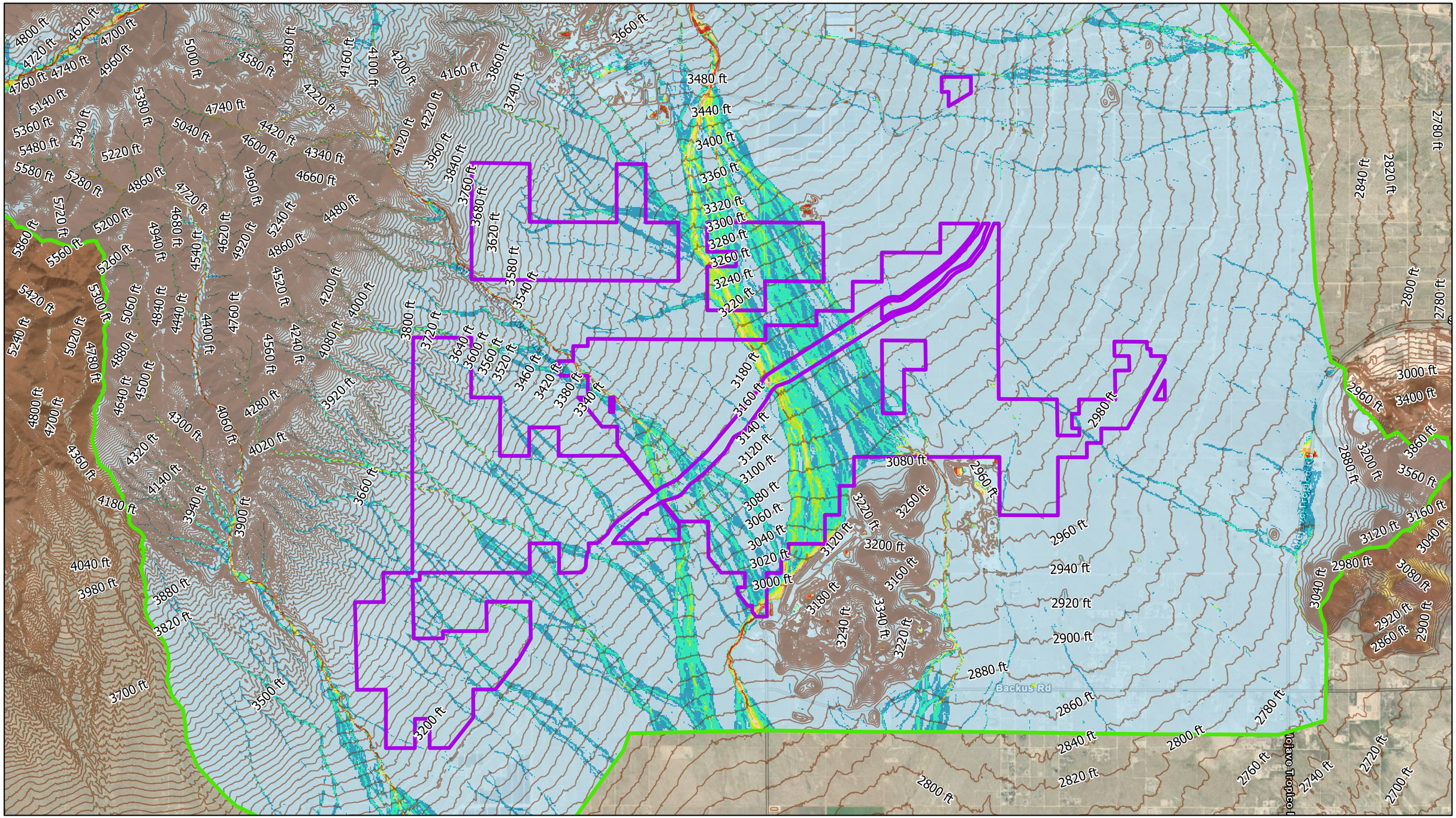

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Max Water Depth (ft)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 0.75

Exhibit 12: 10-Year Max Water Depth Project Map

July 3, 2025

\\westwoodps.local\Global Projects\00365\02.03_GIS_HydroExhibits\Discover Solar PV and Storage Project\Discovery Solar PV and Storage Project.aprx
10 YR Max Water Depth Project Area.mxd - 10 YR Max Water Depth Project Area | 6/27/2025 2:39 PM | EBurford

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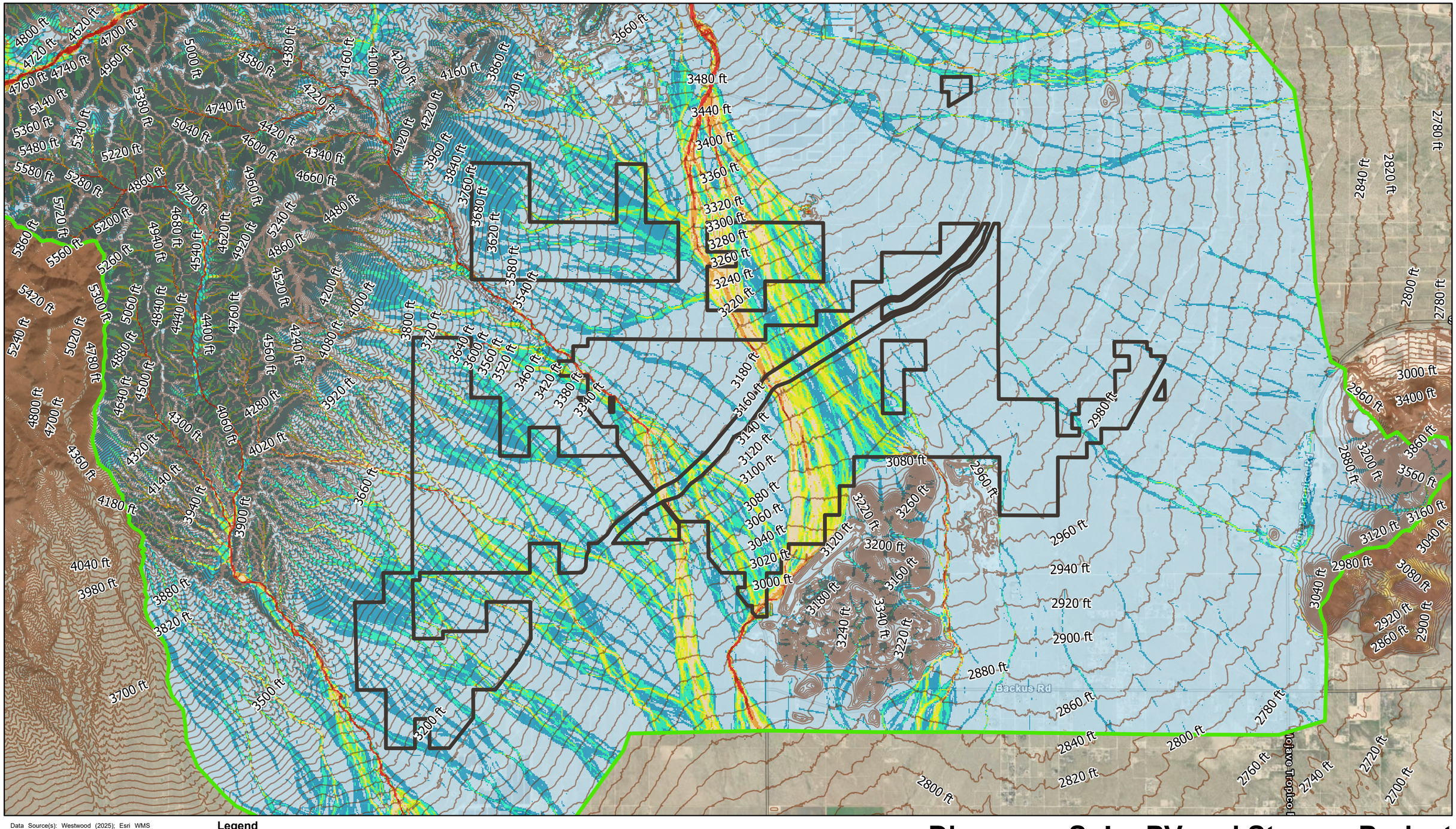

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Peak Velocity (fps)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 0.75

Exhibit 13: 10-Year Peak Velocity Project Map

July 3, 2025

\\westwoodps.local\Global Projects\0036582.03_GIS_HydroExhibits\Discover Solar PV and Storage Project\Discovery Solar PV and Storage Project.aprx
10 YY Peak Velocity Project Area Map | 10 YY Peak Velocity Project Area | 6/27/2025 11:12 AM | EBelfield

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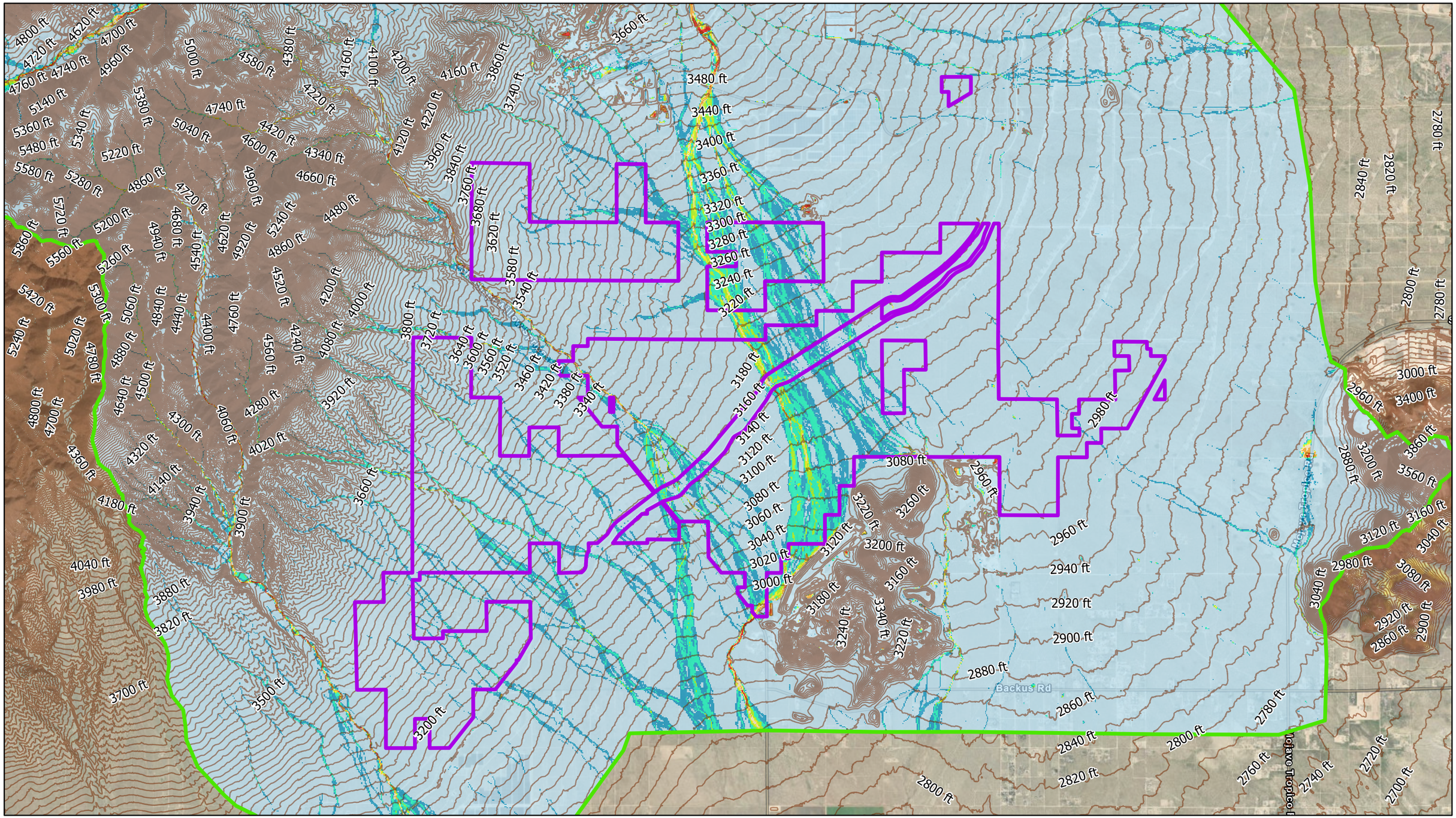

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Max Water Depth (ft)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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N

0 Miles 0.75

Exhibit 14: 5-Year Max Water Depth Project Map

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\\westwoodps.local\Global Projects\0036582.03_GIS_HydroExhibits\Discover Solar PV and Storage Project\Discovery Solar PV and Storage Project.aprx
5 Yr Max Water Depth Project Area.mxd 2 - 5 Yr Max Water Depth Project Area 02/27/2025 12:04 PM JEdenfield

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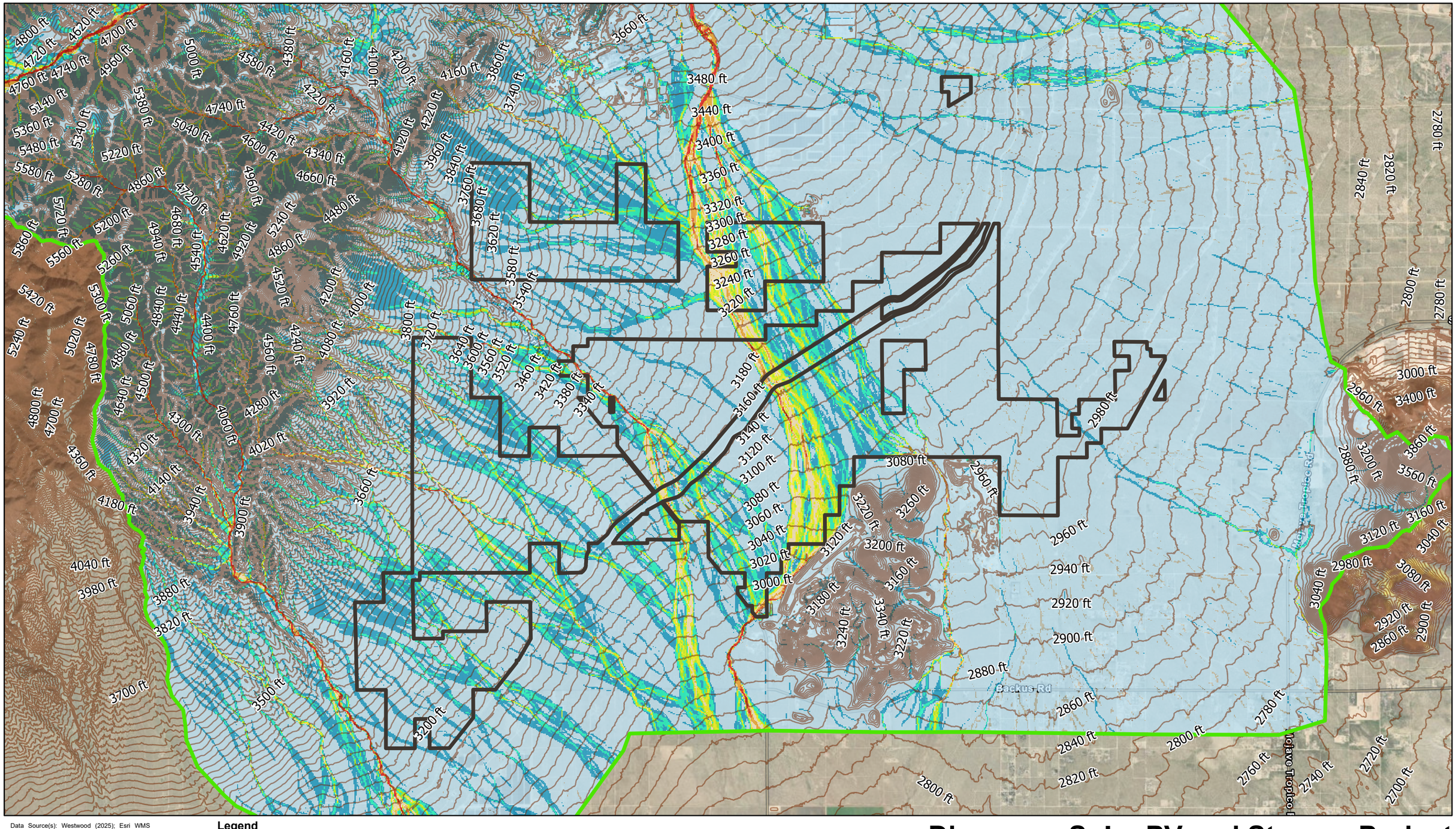

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project site
- FLO-2D Model Boundary
- County Boundary
- 20' Contours

Peak Velocity (fps)

- 0.00 - 0.25
- 0.26 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 5.00
- 5.01 +

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Exhibit 15: 5-Year Peak Velocity Project Map

N

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July 3, 2025

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5 5Yr Peak Velocity Project Area Maps - 5 Yr Peak Velocity Project Area2 6/27/2025 12:07 PM ISBurford

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Appendix A

NOAA Atlas 14 Rainfall Data

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NOAA Atlas 14, Volume 6, Version 2
Location name: Mojave, California, USA*
Latitude: 34.9994°, Longitude: -118.3497°
Elevation: 3876.57 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.100 (0.082-0.122)	0.131 (0.108-0.161)	0.176 (0.145-0.217)	0.218 (0.177-0.270)	0.281 (0.221-0.360)	0.335 (0.259-0.439)	0.397 (0.299-0.533)	0.470 (0.344-0.648)	0.585 (0.411-0.841)	0.740 (0.502-1.10)
10-min	0.143 (0.118-0.175)	0.188 (0.154-0.230)	0.253 (0.208-0.311)	0.312 (0.254-0.387)	0.402 (0.317-0.516)	0.481 (0.371-0.630)	0.570 (0.429-0.764)	0.673 (0.493-0.929)	0.838 (0.588-1.21)	1.06 (0.720-1.58)
15-min	0.173 (0.142-0.212)	0.227 (0.187-0.279)	0.306 (0.251-0.376)	0.377 (0.307-0.468)	0.486 (0.383-0.624)	0.581 (0.448-0.761)	0.689 (0.519-0.925)	0.814 (0.596-1.12)	1.01 (0.712-1.46)	1.28 (0.871-1.91)
30-min	0.238 (0.196-0.292)	0.313 (0.257-0.384)	0.421 (0.346-0.518)	0.520 (0.423-0.645)	0.670 (0.528-0.860)	0.801 (0.618-1.05)	0.949 (0.715-1.27)	1.12 (0.821-1.55)	1.40 (0.981-2.01)	1.77 (1.20-2.63)
60-min	0.340 (0.281-0.417)	0.447 (0.368-0.549)	0.603 (0.495-0.741)	0.744 (0.606-0.923)	0.959 (0.755-1.23)	1.15 (0.884-1.50)	1.36 (1.02-1.82)	1.60 (1.17-2.21)	2.00 (1.40-2.87)	2.53 (1.72-3.77)
2-hr	0.519 (0.428-0.636)	0.670 (0.552-0.822)	0.882 (0.725-1.09)	1.07 (0.870-1.33)	1.34 (1.06-1.72)	1.57 (1.21-2.05)	1.82 (1.37-2.44)	2.10 (1.54-2.89)	2.52 (1.77-3.62)	2.89 (1.96-4.30)
3-hr	0.656 (0.541-0.804)	0.846 (0.696-1.04)	1.11 (0.909-1.36)	1.33 (1.09-1.65)	1.66 (1.31-2.13)	1.92 (1.48-2.52)	2.21 (1.66-2.97)	2.53 (1.85-3.49)	2.99 (2.10-4.30)	3.39 (2.30-5.05)
6-hr	0.944 (0.778-1.16)	1.23 (1.01-1.51)	1.61 (1.32-1.98)	1.93 (1.58-2.40)	2.39 (1.88-3.06)	2.75 (2.12-3.60)	3.14 (2.36-4.21)	3.55 (2.60-4.89)	4.14 (2.90-5.95)	4.62 (3.14-6.88)
12-hr	1.24 (1.02-1.52)	1.68 (1.39-2.07)	2.26 (1.86-2.78)	2.74 (2.23-3.40)	3.40 (2.67-4.35)	3.91 (3.02-5.12)	4.44 (3.34-5.96)	5.00 (3.66-6.90)	5.78 (4.06-8.31)	6.41 (4.35-9.54)
24-hr	1.62 (1.44-1.86)	2.29 (2.03-2.63)	3.16 (2.79-3.65)	3.88 (3.40-4.51)	4.86 (4.12-5.85)	5.62 (4.66-6.91)	6.40 (5.18-8.07)	7.22 (5.68-9.36)	8.34 (6.29-11.3)	9.24 (6.73-12.9)
2-day	2.01 (1.78-2.31)	2.83 (2.51-3.25)	3.92 (3.47-4.53)	4.84 (4.24-5.63)	6.13 (5.19-7.38)	7.15 (5.94-8.79)	8.22 (6.66-10.4)	9.36 (7.37-12.1)	11.0 (8.27-14.8)	12.3 (8.94-17.2)
3-day	2.24 (1.99-2.58)	3.14 (2.79-3.62)	4.35 (3.85-5.02)	5.38 (4.72-6.27)	6.86 (5.81-8.25)	8.04 (6.67-9.89)	9.30 (7.53-11.7)	10.6 (8.37-13.8)	12.6 (9.48-17.0)	14.1 (10.3-19.8)
4-day	2.45 (2.17-2.81)	3.42 (3.03-3.93)	4.72 (4.17-5.45)	5.83 (5.11-6.79)	7.42 (6.29-8.94)	8.72 (7.23-10.7)	10.1 (8.16-12.7)	11.6 (9.09-15.0)	13.7 (10.3-18.5)	15.4 (11.2-21.6)
7-day	2.83 (2.51-3.25)	3.91 (3.46-4.49)	5.33 (4.71-6.15)	6.54 (5.73-7.60)	8.24 (6.98-9.92)	9.61 (7.98-11.8)	11.1 (8.96-14.0)	12.6 (9.94-16.4)	14.9 (11.2-20.1)	16.7 (12.2-23.4)
10-day	3.06 (2.71-3.51)	4.18 (3.71-4.81)	5.66 (5.01-6.54)	6.91 (6.06-8.03)	8.64 (7.32-10.4)	10.0 (8.32-12.3)	11.5 (9.31-14.5)	13.1 (10.3-17.0)	15.3 (11.6-20.7)	17.2 (12.5-24.1)
20-day	3.68 (3.27-4.23)	5.01 (4.45-5.77)	6.74 (5.96-7.78)	8.17 (7.17-9.51)	10.1 (8.60-12.2)	11.7 (9.71-14.4)	13.3 (10.8-16.8)	15.1 (11.9-19.6)	17.6 (13.3-23.8)	19.7 (14.3-27.6)
30-day	4.32 (3.84-4.97)	5.89 (5.22-6.78)	7.90 (6.99-9.12)	9.55 (8.38-11.1)	11.8 (10.0-14.2)	13.6 (11.3-16.7)	15.5 (12.5-19.5)	17.5 (13.8-22.7)	20.4 (15.4-27.7)	22.9 (16.7-32.1)
45-day	5.15 (4.58-5.92)	7.00 (6.20-8.05)	9.37 (8.29-10.8)	11.3 (9.92-13.2)	13.9 (11.8-16.8)	16.0 (13.3-19.7)	18.2 (14.8-23.0)	20.6 (16.2-26.8)	24.1 (18.2-32.6)	27.1 (19.7-37.9)
60-day	5.87 (5.21-6.74)	7.91 (7.01-9.10)	10.5 (9.30-12.1)	12.7 (11.1-14.7)	15.6 (13.2-18.8)	17.9 (14.8-22.0)	20.3 (16.4-25.6)	23.0 (18.1-29.8)	26.9 (20.3-36.4)	30.3 (22.1-42.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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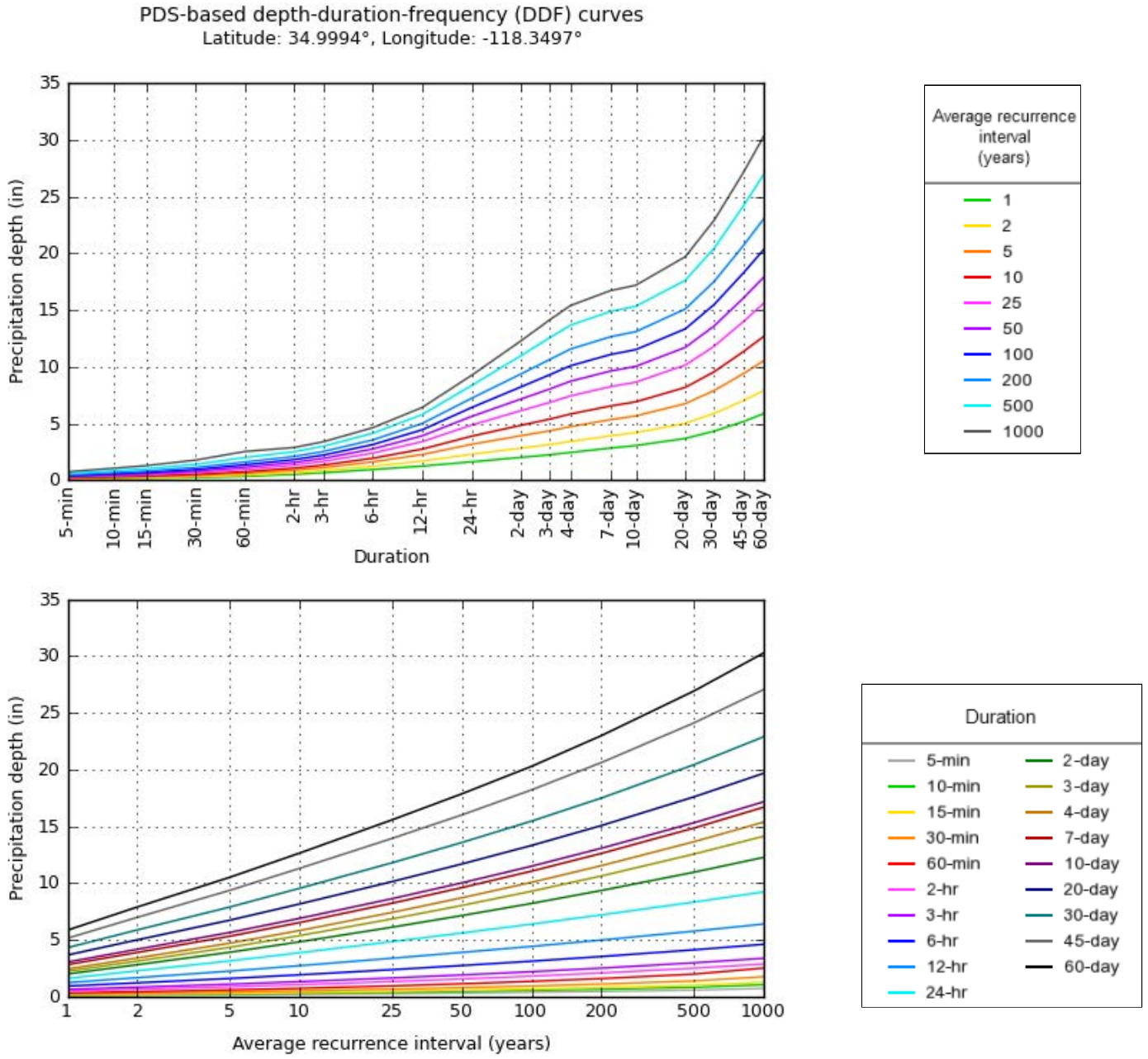
PF graphical



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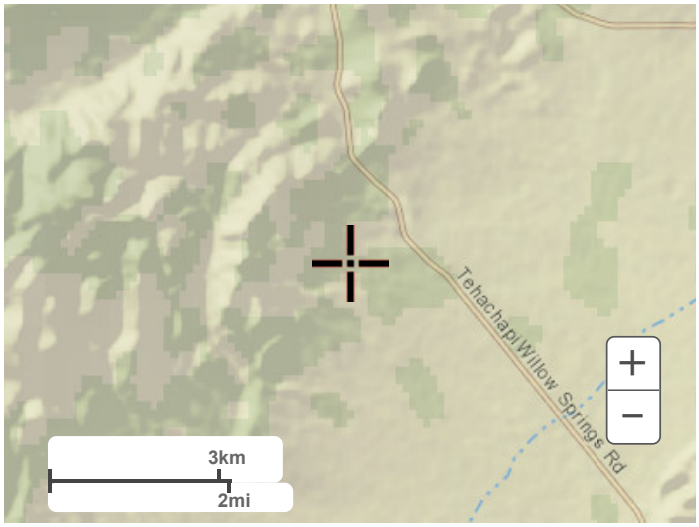
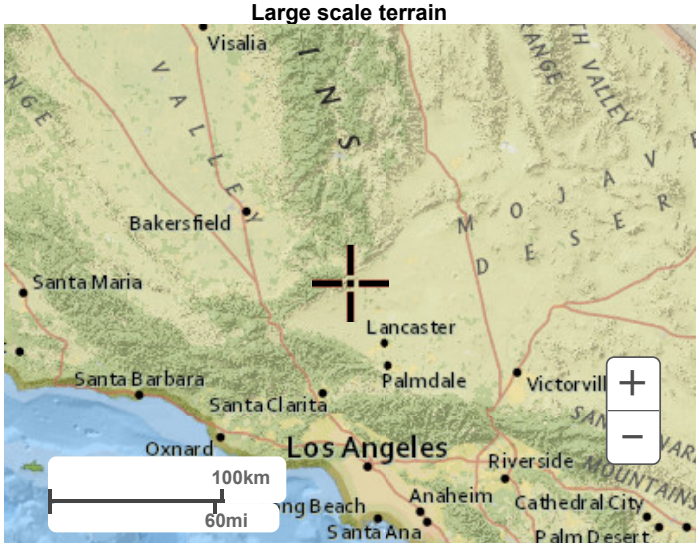
Maps & aerials

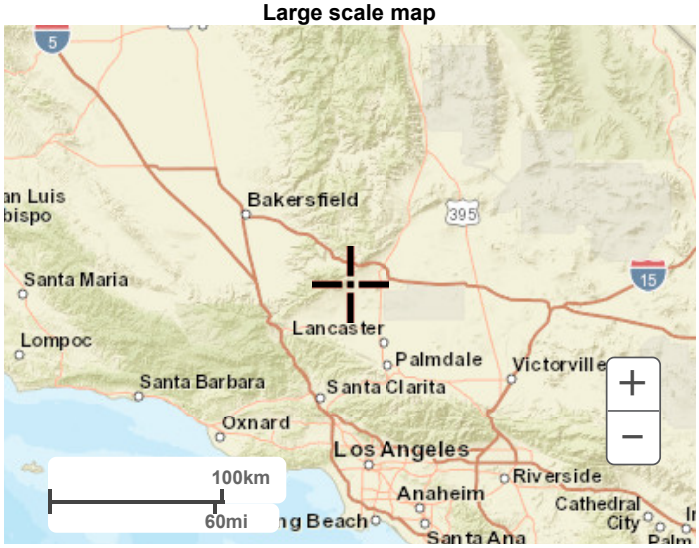
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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NOAA Atlas 14, Volume 6, Version 2
Location name: Mojave, California, USA*
Latitude: 34.9874°, Longitude: -118.3028°
Elevation: 3215.16 ft**
* source: ESRI Maps
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NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.084** (0.069-0.102)	**0.110** (0.091-0.135)	**0.148** (0.122-0.183)	**0.183** (0.149-0.227)	**0.235** (0.185-0.302)	**0.281** (0.216-0.367)	**0.331** (0.249-0.445)	**0.389** (0.285-0.537)	**0.480** (0.337-0.690)	**0.586** (0.397-0.872)
10-min	**0.120** (0.099-0.147)	**0.158** (0.130-0.194)	**0.213** (0.175-0.262)	**0.262** (0.214-0.325)	**0.337** (0.266-0.433)	**0.402** (0.310-0.527)	**0.475** (0.357-0.637)	**0.558** (0.409-0.770)	**0.688** (0.483-0.989)	**0.840** (0.570-1.25)
15-min	**0.145** (0.119-0.178)	**0.191** (0.157-0.234)	**0.257** (0.211-0.317)	**0.317** (0.258-0.394)	**0.408** (0.321-0.523)	**0.486** (0.375-0.637)	**0.574** (0.432-0.771)	**0.675** (0.494-0.931)	**0.832** (0.584-1.20)	**1.01** (0.689-1.51)
30-min	**0.198** (0.164-0.243)	**0.261** (0.215-0.321)	**0.353** (0.289-0.434)	**0.435** (0.354-0.539)	**0.559** (0.440-0.717)	**0.666** (0.514-0.873)	**0.787** (0.592-1.06)	**0.925** (0.677-1.28)	**1.14** (0.800-1.64)	**1.39** (0.944-2.07)
60-min	**0.281** (0.231-0.344)	**0.370** (0.305-0.454)	**0.499** (0.410-0.614)	**0.615** (0.501-0.763)	**0.791** (0.623-1.01)	**0.943** (0.727-1.24)	**1.11** (0.838-1.49)	**1.31** (0.958-1.81)	**1.61** (1.13-2.32)	**1.97** (1.34-2.93)
2-hr	**0.427** (0.352-0.523)	**0.553** (0.455-0.678)	**0.729** (0.598-0.897)	**0.882** (0.718-1.09)	**1.11** (0.870-1.42)	**1.29** (0.995-1.69)	**1.49** (1.12-2.00)	**1.71** (1.25-2.36)	**2.04** (1.43-2.93)	**2.32** (1.57-3.45)
3-hr	**0.536** (0.442-0.657)	**0.693** (0.571-0.851)	**0.910** (0.747-1.12)	**1.10** (0.891-1.36)	**1.36** (1.07-1.74)	**1.58** (1.22-2.06)	**1.81** (1.36-2.42)	**2.06** (1.51-2.84)	**2.42** (1.70-3.48)	**2.72** (1.85-4.05)
6-hr	**0.752** (0.620-0.922)	**0.983** (0.809-1.21)	**1.29** (1.06-1.59)	**1.55** (1.26-1.93)	**1.92** (1.51-2.46)	**2.21** (1.70-2.89)	**2.51** (1.89-3.37)	**2.83** (2.07-3.91)	**3.28** (2.31-4.72)	**3.65** (2.48-5.44)
12-hr	**0.970** (0.799-1.19)	**1.33** (1.09-1.63)	**1.80** (1.47-2.21)	**2.18** (1.78-2.70)	**2.71** (2.13-3.47)	**3.12** (2.40-4.08)	**3.53** (2.66-4.74)	**3.97** (2.91-5.48)	**4.58** (3.21-6.58)	**5.05** (3.43-7.52)
24-hr	**1.25** (1.11-1.44)	**1.80** (1.59-2.07)	**2.51** (2.22-2.89)	**3.09** (2.71-3.59)	**3.88** (3.29-4.66)	**4.48** (3.72-5.51)	**5.11** (4.13-6.44)	**5.75** (4.53-7.46)	**6.63** (5.00-8.97)	**7.33** (5.34-10.3)
2-day	**1.55** (1.38-1.78)	**2.21** (1.96-2.54)	**3.08** (2.72-3.55)	**3.81** (3.34-4.43)	**4.83** (4.10-5.82)	**5.64** (4.68-6.94)	**6.48** (5.25-8.17)	**7.37** (5.80-9.56)	**8.63** (6.51-11.7)	**9.63** (7.02-13.5)
3-day	**1.73** (1.54-1.99)	**2.44** (2.17-2.81)	**3.41** (3.01-3.93)	**4.22** (3.70-4.91)	**5.38** (4.56-6.48)	**6.31** (5.24-7.76)	**7.29** (5.90-9.19)	**8.34** (6.56-10.8)	**9.83** (7.41-13.3)	**11.0** (8.04-15.5)
4-day	**1.87** (1.66-2.15)	**2.63** (2.33-3.03)	**3.66** (3.23-4.22)	**4.53** (3.97-5.27)	**5.77** (4.89-6.95)	**6.77** (5.62-8.33)	**7.83** (6.34-9.87)	**8.96** (7.05-11.6)	**10.6** (7.97-14.3)	**11.9** (8.66-16.6)
7-day	**2.13** (1.89-2.45)	**2.97** (2.64-3.42)	**4.10** (3.62-4.73)	**5.04** (4.42-5.87)	**6.37** (5.40-7.67)	**7.43** (6.17-9.14)	**8.55** (6.92-10.8)	**9.74** (7.66-12.6)	**11.4** (8.61-15.4)	**12.8** (9.31-17.9)
10-day	**2.27** (2.02-2.61)	**3.15** (2.79-3.62)	**4.31** (3.82-4.98)	**5.29** (4.64-6.15)	**6.64** (5.63-7.99)	**7.72** (6.40-9.49)	**8.84** (7.16-11.1)	**10.0** (7.90-13.0)	**11.7** (8.84-15.9)	**13.1** (9.53-18.3)
20-day	**2.72** (2.41-3.12)	**3.77** (3.34-4.33)	**5.14** (4.55-5.93)	**6.28** (5.51-7.31)	**7.85** (6.66-9.45)	**9.09** (7.54-11.2)	**10.4** (8.40-13.1)	**11.7** (9.23-15.2)	**13.7** (10.3-18.5)	**15.2** (11.1-21.3)
30-day	**3.16** (2.80-3.63)	**4.38** (3.88-5.04)	**5.97** (5.28-6.89)	**7.28** (6.39-8.47)	**9.08** (7.70-10.9)	**10.5** (8.72-12.9)	**12.0** (9.71-15.1)	**13.6** (10.7-17.6)	**15.8** (11.9-21.4)	**17.6** (12.9-24.7)
45-day	**3.77** (3.35-4.34)	**5.21** (4.62-6.00)	**7.10** (6.28-8.20)	**8.66** (7.60-10.1)	**10.8** (9.16-13.0)	**12.5** (10.4-15.4)	**14.3** (11.5-18.0)	**16.2** (12.7-21.0)	**18.9** (14.2-25.5)	**21.1** (15.4-29.5)
60-day	**4.27** (3.79-4.91)	**5.86** (5.20-6.75)	**7.95** (7.03-9.17)	**9.67** (8.48-11.3)	**12.1** (10.2-14.5)	**13.9** (11.6-17.1)	**15.9** (12.9-20.0)	**18.0** (14.2-23.4)	**21.1** (15.9-28.5)	**23.6** (17.2-33.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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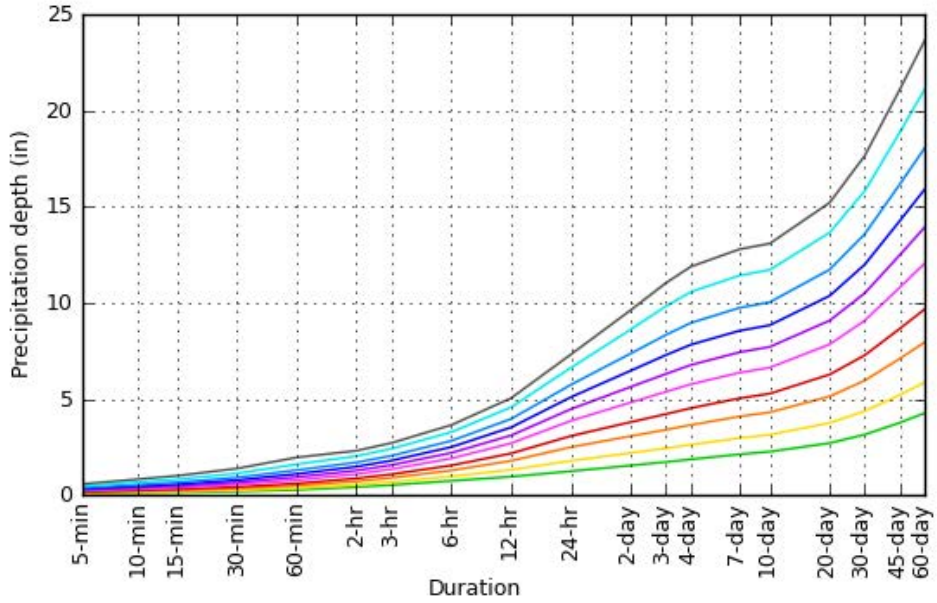
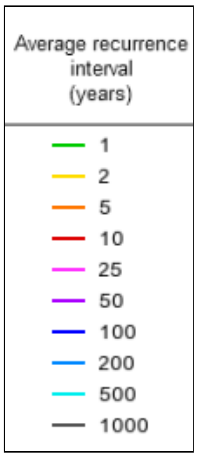
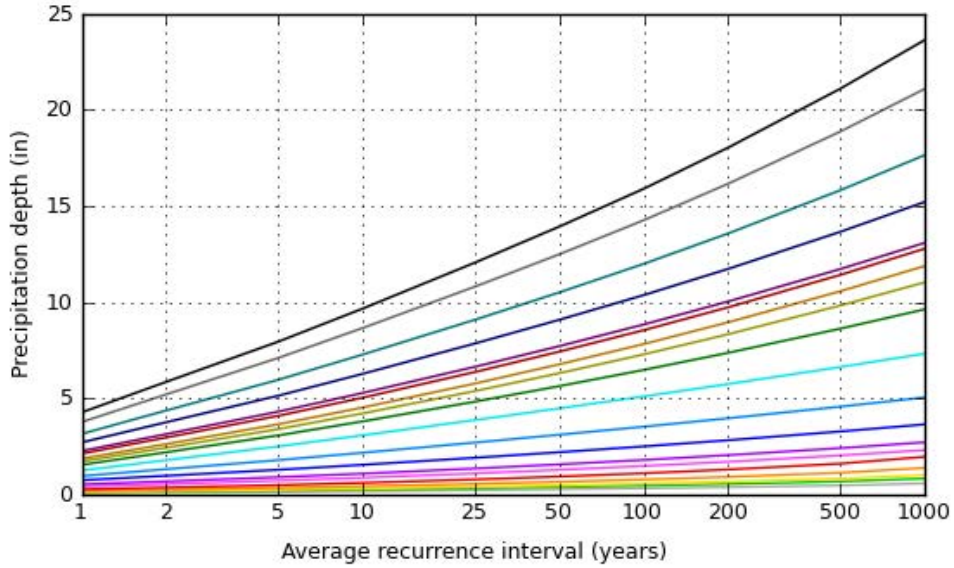
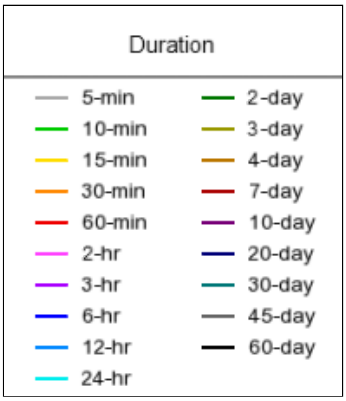
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 34.9874°, Longitude: -118.3028°









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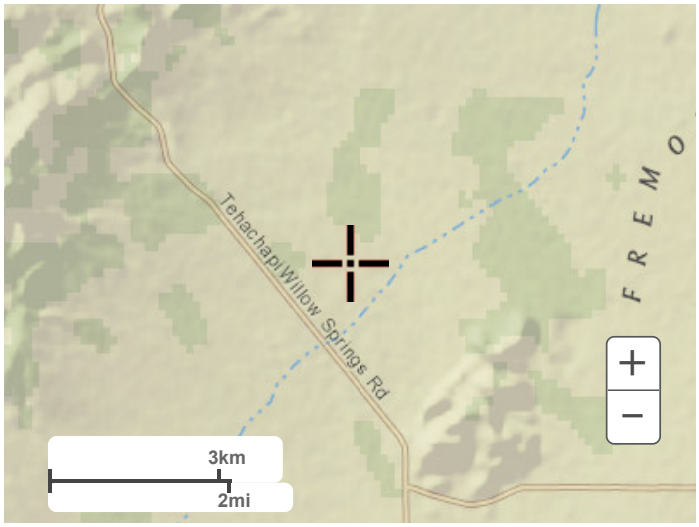
Maps & aerials

Small scale terrain



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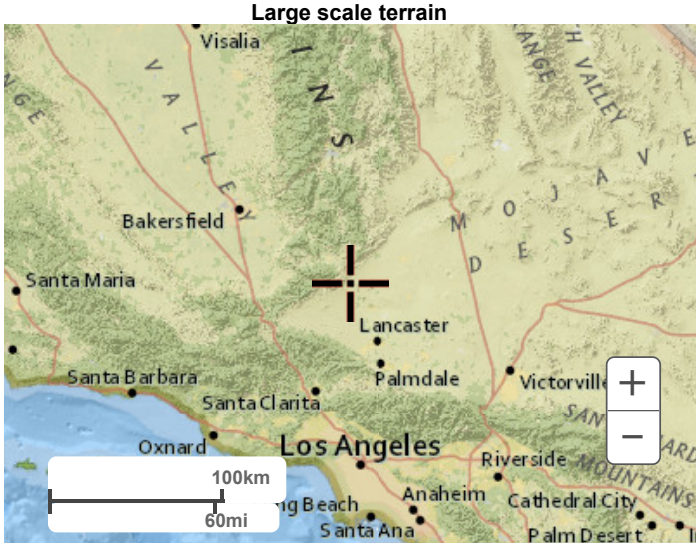

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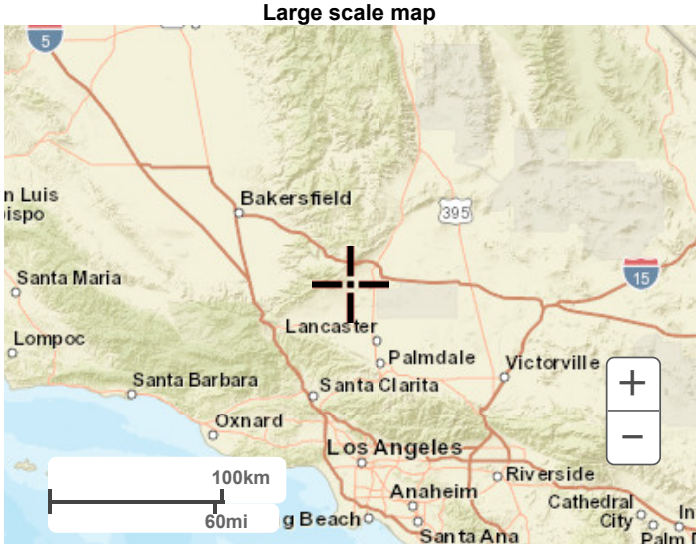

Large scale aerial



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Questions?: HDSC.Questions@noaa.gov

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ENGINEERING, SURVEYING &
PERMIT SERVICES DEPARTMENT
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DEVELOPMENT SERVICES AGENCY
Engineering, Surveying and Permit Services Department
Planning and Community Development Department
Roads Department

Engineering Bulletin 11-02

Subject: Sump Volume Requirements **Date: December 21, 2011**
Application: Kern County Development Standards

Background: In 1995, Kern County revised the standard by which retention basin sizing is based, and published it in the latest edition of the Kern County Development Standards dated August 5, 2010. Division 4 of the Development Standards defined the design volume for basins as runoff from the Intermediate Storm Design Discharge (ISDD) 5-day rainfall event from the impervious area. The equation is;

Runoff Volume = 0.12 (D_{10}) (a_i) (Area) where:

D_{10} = 10 yr 24-hr. depth of rainfall (in.)
a_i = average percentage of impervious area
Area = Drainage area of total development
0.12 = 1.44 x 1/12
1.44 = 5 day mass ratio (KC Hydrology Manual, Table B-1)
1/12 = Conversion of rainfall depth in inches to feet

The revision to the standard was chosen for consistency with the newly created multi-day detention basin sizing standard and to approximate the sump sizing criteria used by the City of Bakersfield in their application of 100yr 24hr rainfall event. The new Development Standards also linked ISDD calculations to the application of rainfall/runoff methodology found in the Kern County Hydrology Manual. Since the Hydrology Manual had adopted rainfall data found in NOAA Atlas 2, Volume XI, retention basin sizing was also tied to that data base.

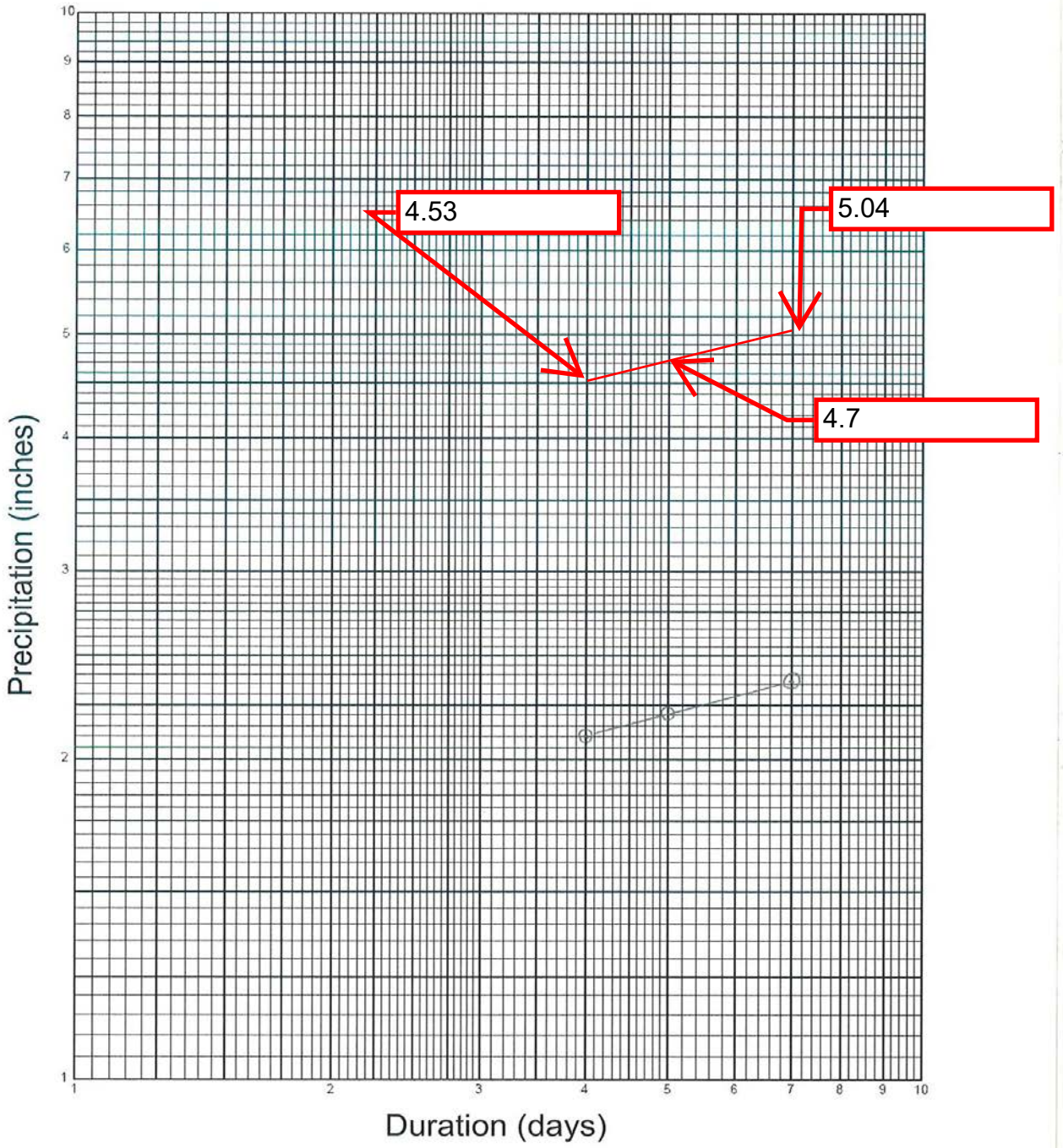
Data Update: In May of 2011 the National Weather Service published NOAA Atlas 14, Volume 6, Version 2.0 for California. As stated in the introduction of the publication, this document supersedes precipitation-frequency estimates found in NOAA Atlas 2, Volume 11 and NOAA Atlas 14 Volume 1, which covered Kern County's desert region. Gage data used in the precipitation-frequency analysis for NOAA Atlas 14, Volume 6 incorporates the latest, quality-verified rainfall information available up through June, 2010. The precipitation-frequency data is now available to the public, via a graphic interface, at the Hydrometeorological Design Studies Center's web site. (http://hdsc.nws.noaa.gov/hdsc/pfds/). It contains both short and long duration, including multi-day rainfall data in tabular and graphic formats.

Policy: Retention basin sizing shall continue to be based upon runoff from the ISDD 5 day storm event from impervious area. The equation is now;

Runoff Volume (cu.ft.) = [($D_{10yr\text{-}5day}$)/12] (a_i) (Area) where;

$D_{10\text{-}5day}$ = 10yr 5 day depth of rainfall (in.) obtained from NOAA Atlas 14, Vol 6, Ver. 2.0
a_i = average percentage of impervious area
Area = Drainage area of total development (sq.ft.)

6) Select 10yr 4day rainfall depth - 4.53 and 10yr 7 day rainfall depth – 5.04
7) Plot points on log–log graph paper.



8) Read the solution for the 10 yr 5 day depth of rainfall– 4.7 inches

Appendix B

Kern County Curve Number Table

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Residential Landscaping (Lawn, Shrubs, etc.) - The pervious portions of commercial establishments, single and multiple family dwellings, trailer parks and schools where the predominant land cover is lawn, shrubbery and trees.

Row Crops - Lettuce, tomatoes, beets, tulips or any field crop planted in rows far enough apart that most of the soil surface is exposed to rainfall impact throughout the growing season. At plowing, planting and harvest times it is equivalent to fallow.

Small Grain - Wheat, oats, barley, flax, etc. planted in rows close enough that the soil surface is not exposed except during planting and shortly thereafter.

Legumes - Alfalfa, sweetclover, timothy, etc. and combinations are either planted in close rows or broadcast.

Fallow - Fallow land is land plowed but not yet seeded or tilled.

Woodland - grass - Areas with an open cover of broadleaf or coniferous trees usually live oak and pines, with the intervening ground space occupied by annual grasses or weeds. The trees may occur singly or in small clumps. Canopy density, the amount of ground surface shaded at high noon, is from 20 to 50 percent.

Woodland - Areas on which coniferous or broadleaf trees predominate. The canopy density is at least 50 percent. Open areas may have a cover of annual or perennial grasses or of brush. Herbaceous plant cover under the trees is usually sparse because of leaf or needle litter accumulation.

Chaparral - Land on which the principal vegetation consists of evergreen shrubs with broad, hard, stiff leaves such as manzonita, ceanothus and scrub oak. The brush cover is usually dense or moderately dense. Diffusely branched evergreen shrubs with fine needle-like leaves, such as chamise and redchank, with dense high growth are also included in this soil cover.

Annual Grass - Land on which the principal vegetation consists of annual grasses and weeds such as annual bromes, wild barley, soft chess, ryegrass and filaree.

Irrigated Pasture - Irrigated land planted to perennial grasses and legumes for production of forage and which is cultivated only to establish or renew the stand of plants. Dry land pasture is considered as annual grass.

Meadow - Land areas with seasonally high water table, locally called cienegas. Principal vegetation consists of sod-forming grasses interspersed with other plants.

Orchard (Deciduous) - Land planted to such deciduous trees as apples, apricots, pears, walnuts, and almonds.

Orchard (Evergreen) - Land planted to evergreen trees which include citrus and avocados and coniferous plantings.

Turf - Golf courses, parks and similar lands where the predominant cover is irrigated mowed close-grown turf grass. Parks in which trees are dense may be classified as woodland.

KERN COUNTY

HYDROLOGY MANUAL

SCS
COVER TYPE
DESCRIPTIONS

FIGURE C-1

Curve[1] Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		77	86	91	94
Chaparral, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparral, Narrowleaf (Chamise and Redskank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadows or Cienagas (Areas with seasonally high water table, principal vegatation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	71	78
Open Brush (Soft wood shrubs-buckwheat,sage,etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (4) (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawns, shrubs, etc.)	Good	39	61	74	80
Turf (Irrigated and mowed grass)	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80

KERN COUNTY
Hydrology Manual

CURVE NUMBERS FOR PERVIOUS AREAS

Curve[1] Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
AGRICULTURAL COVERS -					
Fallow (Bare Soil)		77	86	91	94
Close Seeded (alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Evergreen (Citrus, avacodos, etc.)	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Pasture (Grassland or range, continuos forage for grazing)	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Row Crops (Straight row, non-contoured)	Poor	72	81	88	91
	Good	67	78	85	89
Small Grain (Straight row, non-contoured)	Poor	65	76	84	88
	Good	63	75	83	87

Notes:

1. Average runoff condition, Ia = 0.2(S)

2. Poor: Heavily grazed, regularly burned areas, or areas of high burn potential. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.

   Fair: Moderate cover with 50 percent to 75 percent of the ground surface protected. In wooded areas the woods are grazed but not burned, and some forest litter covers the soil.

   Good: Heavy or dense cover with more than 75 percent of the ground surface protected. In wooded areas the woods are protected from grazing, litter and brush adequately cover soil.

3. See Figure C-1 for definition of cover types.

KERN COUNTY
Hydrology Manual

CURVE NUMBERS FOR PERVIOUS AREAS

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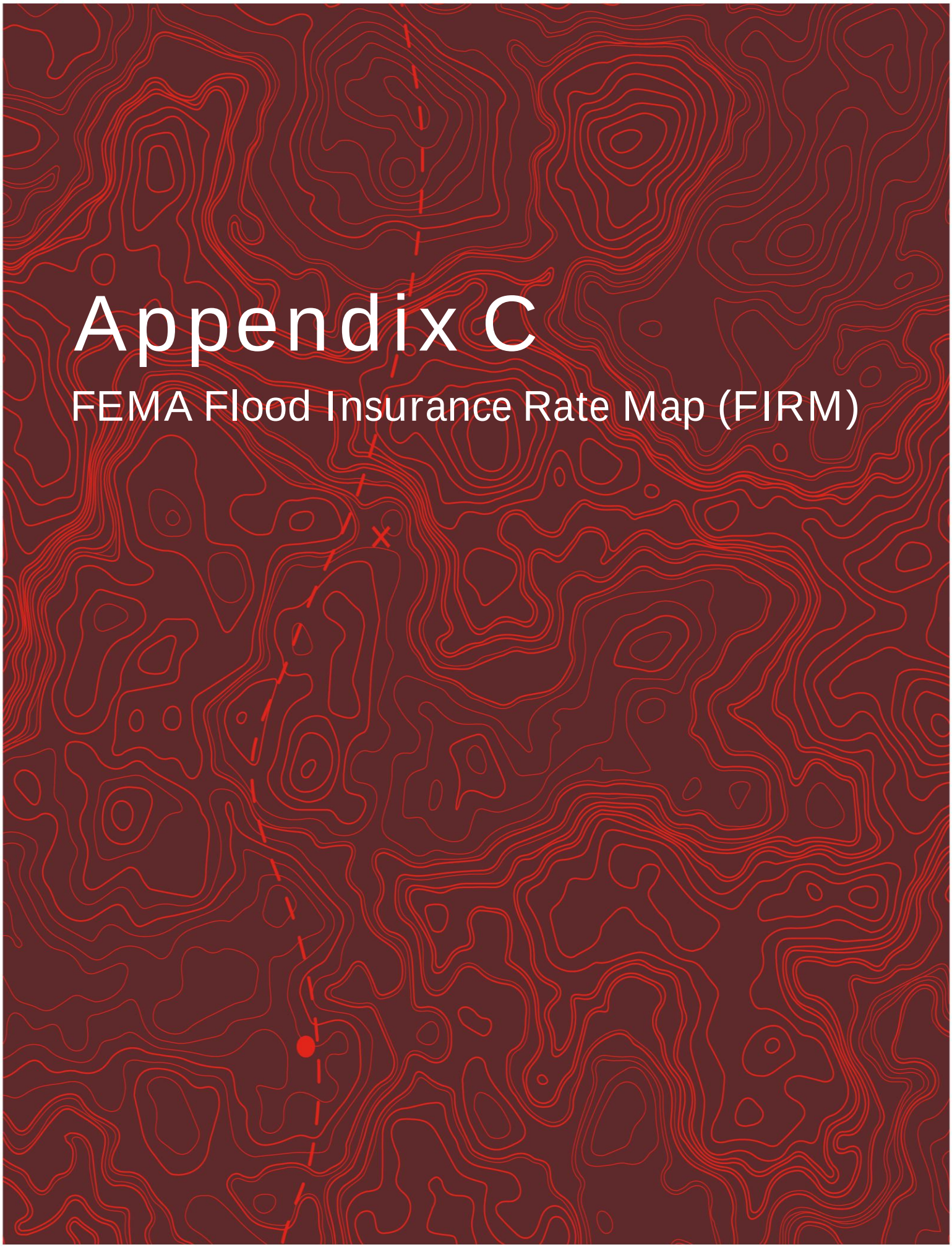
Appendix C

FEMA Flood Insurance Rate Map (FIRM)



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NOTES TO USERS

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To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from USDA - Farm Service Agency - Aerial Photography Field Office dated 2005 and from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1992 or later.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, *a Flood Insurance Study report*, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

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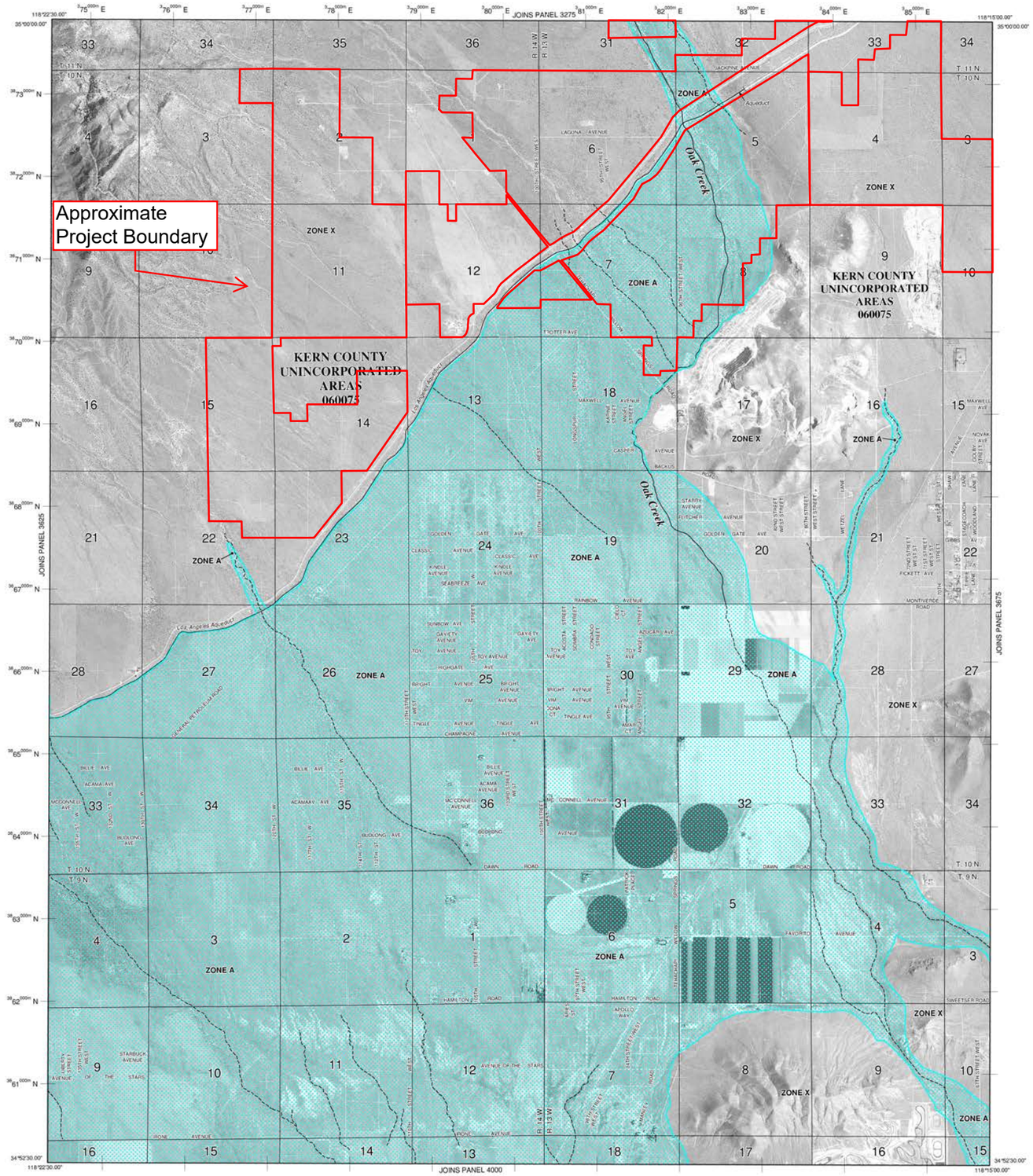

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M — 5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 2008
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3650E

FIRM
FLOOD INSURANCE RATE MAP
KERN COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 3650 OF 4125
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
KERN COUNTY	060075	3650	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06029C3650E

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

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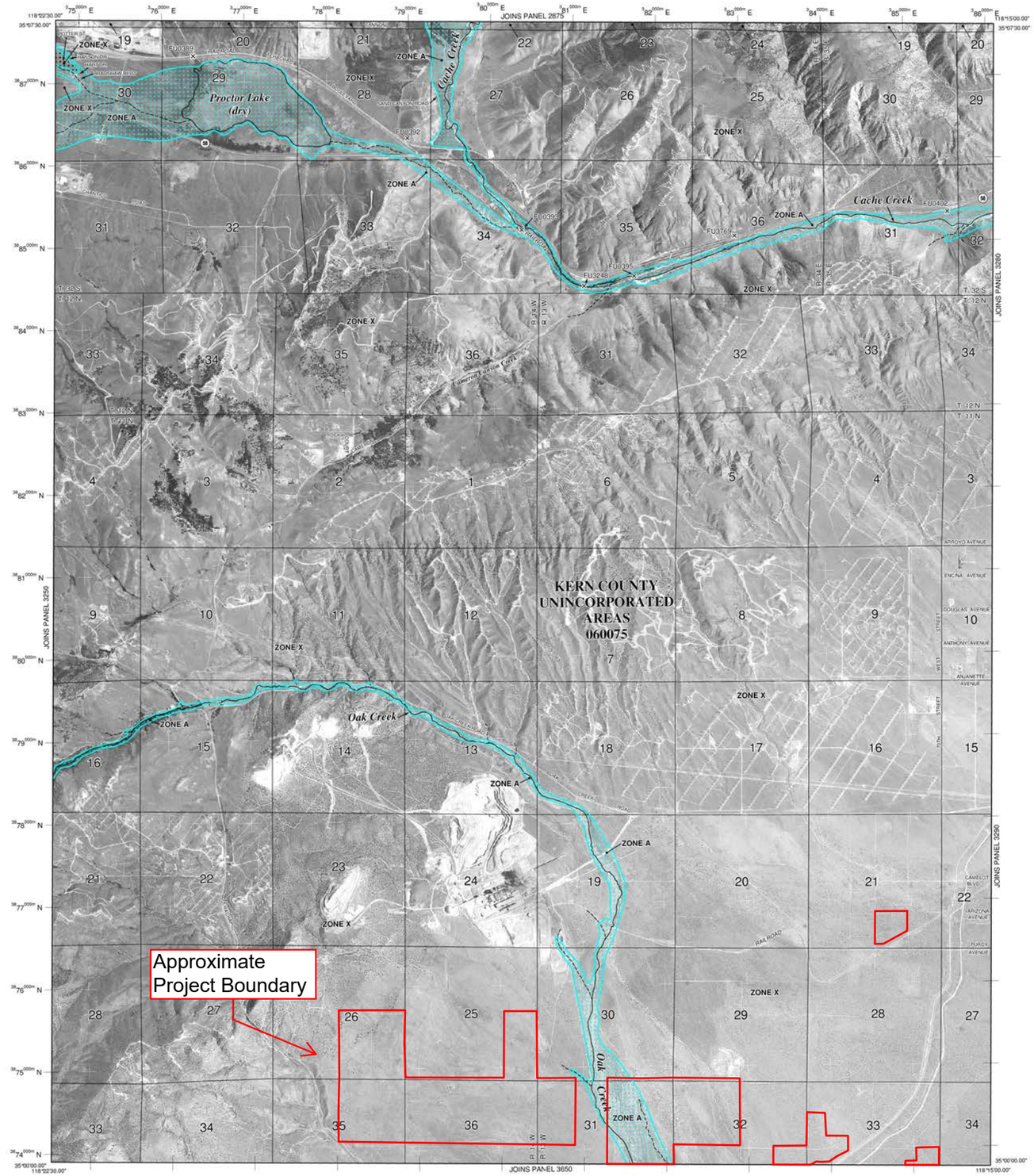

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Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

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6000000 M 5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic

DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 River Mile

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FLOOD INSURANCE RATE MAP
September 26, 2008
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1000 0 2000 4000 FEET
600 0 600 1200 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3275E

FIRM
FLOOD INSURANCE RATE MAP
KERN COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 3275 OF 4125
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
KERN COUNTY	060075	3275	E

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06029C3275E
EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

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This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #8202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242**, or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from USDA –Farm Service Agency –Aerial Photography Field Office dated 2005 and from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1992 or later.

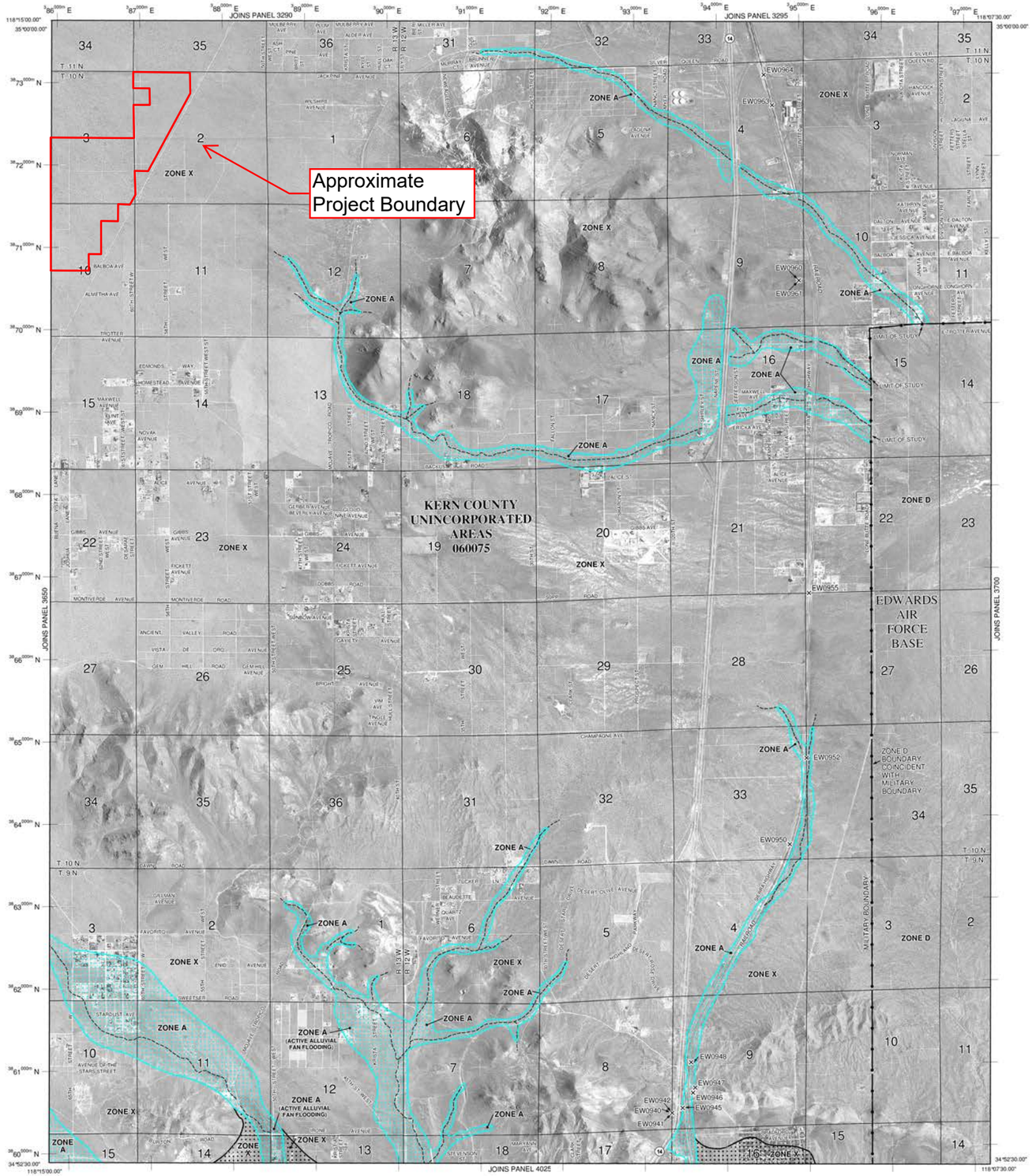
This map reflects more detailed and up–to–date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the *Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1–800–358–9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, *a Flood Insurance Study report*, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1–800–358–9620 and its website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1–877–FEMA MAP** (1–877–336–2627) or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 (EL 987) Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A–A Cross section line
- 23–23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000m N 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M 5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 26, 2008
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1–800–638–6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3675E

FIRM
FLOOD INSURANCE RATE MAP
KERN COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 3675 OF 4125
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
KERN COUNTY	060075	3675	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06029C3675E

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

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Appendix D

CivilD Printouts (Kern County Hydrology Manual)

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U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 2004-2014, Version 9.0

Study date 06/07/22

++

Kern County Synthetic Unit Hydrograph Hydrology Method
Manual date - 1992

Program License Serial Number 6271

Storm Event Year = 100

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

RAINFALL DATA INPUT:
Slope of Intensity-Duration Curve Slope = 0.600

Zone Designation: Desert Region Latitude = 34.98

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 2		
111.00	6	1.23
Rainfall data for year 2		
111.00	24	2.29
Rainfall data for year 100		
111.00	6	3.14
Rainfall data for year 100		
111.00	24	6.40

++
DESERT REGION area of study
Log-Log Rainfall Intensity Slope = 0.60

******** Area-averaged max loss rate, Fm ********

SCS curve Number	Area (Ac.)	Area Fraction	Fp (In/Hr)	Ap (dec.)	Fm (In/Hr)
88.0	80.00	0.721	0.236	1.000	0.236
91.0	31.00	0.279	0.180	1.000	0.180

Area-averaged adjusted loss rate Fm (In/Hr) = 0.220

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	S	Pervious Yield Fr
80.00	0.721	88.0	1.36	0.783
31.00	0.279	91.0	0.99	0.836

Area-averaged catchment yield fraction, Y = 0.798
Area-averaged low loss fraction, Yb = 0.202
++
Watercourse length = 6000.00(Ft.)
Length from concentration point to centroid = 3400.00(Ft.)
Elevation difference along watercourse = 470.00(Ft.)
Mannings friction factor along watercourse = 0.120
Watershed area = 111.00(Ac.)
Catchment Lag time = 0.814 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 10.2357
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.220(In/Hr)
Average low loss rate fraction (Yb) = 0.202 (decimal)
VALLEY DEVELOPED S-Graph proportion = 0.000
VALLEY UNDEVELOPED S-Graph proportion = 0.000
FOOTHILL S-Graph proportion = 0.000
MOUNTAIN S-Graph proportion = 0.400
DESERT S-Graph proportion = 0.600

Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 1.165(In)
Specified peak 1-hour rainfall = 1.538(In)
Computed peak 3-hour rainfall = 2.382(In)
Specified peak 6-hour rainfall = 3.140(In)
Specified peak 24-hour rainfall = 6.400(In)

Rainfall depth area reduction factors:
Using a total area of 111.00(Ac.) (Ref: fig. E-4)

5-minute factor = 0.995 Adjusted rainfall = 0.566(In)
30-minute factor = 0.995 Adjusted rainfall = 1.159(In)
1-hour factor = 0.995 Adjusted rainfall = 1.530(In)
3-hour factor = 0.999 Adjusted rainfall = 2.380(In)
6-hour factor = 1.000 Adjusted rainfall = 3.139(In)
24-hour factor = 1.000 Adjusted rainfall = 6.399(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 1342.41 (CFS))	
1	0.797	10.698
2	2.491	22.744
3	4.788	30.839
4	8.027	43.471
5	12.501	60.069
6	18.753	83.918
7	26.998	110.684
8	35.574	115.121
9	43.793	110.335
10	48.420	62.111
11	53.198	64.141
12	57.038	51.556
13	60.311	43.933
14	63.052	36.789
15	65.452	32.223
16	67.659	29.627
17	69.628	26.435
18	71.427	24.150
19	73.064	21.975
20	74.524	19.602
21	75.919	18.722
22	77.264	18.053
23	78.481	16.333
24	79.575	14.694
25	80.580	13.482
26	81.509	12.483
27	82.396	11.905
28	83.230	11.191
29	84.039	10.855
30	84.757	9.643
31	85.459	9.420
32	86.142	9.170
33	86.766	8.386
34	87.379	8.231
35	87.959	7.775
36	88.497	7.231
37	89.004	6.807
38	89.505	6.716
39	89.976	6.323
40	90.419	5.946
41	90.796	5.066
42	91.170	5.014
43	91.529	4.827
44	91.882	4.732
45	92.234	4.732
46	92.577	4.605
47	92.857	3.754
48	93.114	3.447
49	93.365	3.375

50	93.616	3.375
51	93.868	3.375
52	94.119	3.375
53	94.367	3.327
54	94.602	3.153
55	94.836	3.138
56	95.069	3.138
57	95.301	3.102
58	95.498	2.653
59	95.685	2.505
60	95.858	2.320
61	96.025	2.252
62	96.193	2.252
63	96.361	2.252
64	96.529	2.252
65	96.696	2.252
66	96.864	2.252
67	97.025	2.154
68	97.168	1.922
69	97.310	1.913
70	97.453	1.913
71	97.595	1.913
72	97.738	1.913
73	97.880	1.913
74	98.023	1.913
75	98.165	1.913
76	98.351	2.493
77	98.423	0.969
78	98.482	0.792
79	98.541	0.791
80	98.600	0.791
81	98.659	0.791
82	98.718	0.791
83	98.777	0.791
84	98.836	0.791
85	98.894	0.791
86	98.953	0.791
87	99.012	0.791
88	99.071	0.791
89	99.130	0.791
90	99.187	0.766
91	99.217	0.406
92	99.239	0.288
93	99.260	0.288
94	99.282	0.288
95	99.303	0.288
96	99.325	0.288
97	99.346	0.288
98	99.368	0.288
99	99.389	0.288
100	99.410	0.288
101	99.432	0.288
102	99.453	0.288
103	99.475	0.288
104	99.496	0.288
105	99.518	0.288

106	99.539	0.288
107	99.560	0.288
108	99.582	0.288
109	99.603	0.288
110	99.625	0.288
111	99.646	0.288
112	99.668	0.288
113	99.689	0.288
114	99.710	0.288
115	99.732	0.288
116	99.753	0.288
117	99.775	0.288
118	99.796	0.288
119	99.818	0.288
120	99.839	0.288
121	99.861	0.288
122	99.882	0.288
123	99.903	0.288
124	99.925	0.288
125	99.946	0.288
126	99.968	0.288
127	100.000	0.433

Rainfall values calculated at 5 minute intervals:

Peak Rainfall Unit Number	Intensity	Depth	Adjusted	Unit Rainfall (In)
1	6.83	0.57	0.57	0.566
2	4.51	0.75	0.75	0.181
3	3.53	0.88	0.88	0.132
4	2.97	0.99	0.99	0.107
5	2.60	1.08	1.08	0.092
6	2.33	1.17	1.16	0.082
7	2.12	1.24	1.23	0.074
8	1.96	1.31	1.30	0.068
9	1.83	1.37	1.36	0.063
10	1.72	1.43	1.42	0.059
11	1.62	1.48	1.48	0.055
12	1.54	1.54	1.53	0.052
13	1.47	1.59	1.58	0.050
14	1.40	1.63	1.63	0.048
15	1.34	1.68	1.67	0.046
16	1.29	1.72	1.72	0.044
17	1.25	1.77	1.76	0.042
18	1.20	1.81	1.80	0.041
19	1.17	1.85	1.84	0.040
20	1.13	1.88	1.88	0.038
21	1.10	1.92	1.92	0.037
22	1.07	1.96	1.95	0.036
23	1.04	1.99	1.99	0.035
24	1.01	2.03	2.02	0.034
25	0.99	2.06	2.06	0.033
26	0.97	2.09	2.09	0.033
27	0.94	2.12	2.12	0.032
28	0.92	2.16	2.15	0.031
29	0.90	2.19	2.18	0.031
30	0.89	2.22	2.21	0.030

31	0.87	2.24	2.24	0.029
32	0.85	2.27	2.27	0.029
33	0.84	2.30	2.30	0.028
34	0.82	2.33	2.33	0.028
35	0.81	2.36	2.35	0.027
36	0.79	2.38	2.38	0.027
37	0.78	2.41	2.41	0.026
38	0.77	2.43	2.43	0.026
39	0.76	2.46	2.46	0.025
40	0.75	2.48	2.48	0.025
41	0.73	2.51	2.51	0.025
42	0.72	2.53	2.53	0.024
43	0.71	2.56	2.56	0.024
44	0.70	2.58	2.58	0.024
45	0.69	2.60	2.60	0.023
46	0.69	2.63	2.62	0.023
47	0.68	2.65	2.65	0.023
48	0.67	2.67	2.67	0.022
49	0.66	2.69	2.69	0.022
50	0.65	2.72	2.71	0.022
51	0.64	2.74	2.74	0.022
52	0.64	2.76	2.76	0.021
53	0.63	2.78	2.78	0.021
54	0.62	2.80	2.80	0.021
55	0.62	2.82	2.82	0.021
56	0.61	2.84	2.84	0.020
57	0.60	2.86	2.86	0.020
58	0.60	2.88	2.88	0.020
59	0.59	2.90	2.90	0.020
60	0.58	2.92	2.92	0.020
61	0.58	2.94	2.94	0.019
62	0.57	2.96	2.96	0.019
63	0.57	2.98	2.98	0.019
64	0.56	3.00	2.99	0.019
65	0.56	3.01	3.01	0.019
66	0.55	3.03	3.03	0.018
67	0.55	3.05	3.05	0.018
68	0.54	3.07	3.07	0.018
69	0.54	3.09	3.09	0.018
70	0.53	3.10	3.10	0.018
71	0.53	3.12	3.12	0.018
72	0.52	3.14	3.14	0.017
73	0.52	3.16	3.16	0.022
74	0.52	3.18	3.18	0.022
75	0.51	3.21	3.21	0.022
76	0.51	3.23	3.23	0.022
77	0.51	3.25	3.25	0.022
78	0.50	3.27	3.27	0.022
79	0.50	3.29	3.29	0.021
80	0.50	3.31	3.31	0.021
81	0.49	3.34	3.33	0.021
82	0.49	3.36	3.36	0.021
83	0.49	3.38	3.38	0.021
84	0.49	3.40	3.40	0.021
85	0.48	3.42	3.42	0.021
86	0.48	3.44	3.44	0.021

87	0.48	3.46	3.46	0.020
88	0.47	3.48	3.48	0.020
89	0.47	3.50	3.50	0.020
90	0.47	3.52	3.52	0.020
91	0.47	3.54	3.54	0.020
92	0.46	3.56	3.56	0.020
93	0.46	3.58	3.58	0.020
94	0.46	3.60	3.60	0.020
95	0.46	3.62	3.62	0.020
96	0.45	3.64	3.64	0.020
97	0.45	3.66	3.66	0.019
98	0.45	3.68	3.68	0.019
99	0.45	3.70	3.70	0.019
100	0.45	3.72	3.72	0.019
101	0.44	3.74	3.73	0.019
102	0.44	3.75	3.75	0.019
103	0.44	3.77	3.77	0.019
104	0.44	3.79	3.79	0.019
105	0.44	3.81	3.81	0.019
106	0.43	3.83	3.83	0.019
107	0.43	3.85	3.85	0.019
108	0.43	3.87	3.87	0.018
109	0.43	3.88	3.88	0.018
110	0.43	3.90	3.90	0.018
111	0.42	3.92	3.92	0.018
112	0.42	3.94	3.94	0.018
113	0.42	3.96	3.96	0.018
114	0.42	3.98	3.97	0.018
115	0.42	3.99	3.99	0.018
116	0.41	4.01	4.01	0.018
117	0.41	4.03	4.03	0.018
118	0.41	4.05	4.05	0.018
119	0.41	4.06	4.06	0.018
120	0.41	4.08	4.08	0.018
121	0.41	4.10	4.10	0.017
122	0.40	4.12	4.12	0.017
123	0.40	4.13	4.13	0.017
124	0.40	4.15	4.15	0.017
125	0.40	4.17	4.17	0.017
126	0.40	4.18	4.18	0.017
127	0.40	4.20	4.20	0.017
128	0.40	4.22	4.22	0.017
129	0.39	4.24	4.24	0.017
130	0.39	4.25	4.25	0.017
131	0.39	4.27	4.27	0.017
132	0.39	4.29	4.29	0.017
133	0.39	4.30	4.30	0.017
134	0.39	4.32	4.32	0.017
135	0.39	4.34	4.34	0.017
136	0.38	4.35	4.35	0.016
137	0.38	4.37	4.37	0.016
138	0.38	4.39	4.38	0.016
139	0.38	4.40	4.40	0.016
140	0.38	4.42	4.42	0.016
141	0.38	4.43	4.43	0.016
142	0.38	4.45	4.45	0.016

143	0.37	4.47	4.47	0.016
144	0.37	4.48	4.48	0.016
145	0.37	4.50	4.50	0.016
146	0.37	4.51	4.51	0.016
147	0.37	4.53	4.53	0.016
148	0.37	4.55	4.55	0.016
149	0.37	4.56	4.56	0.016
150	0.37	4.58	4.58	0.016
151	0.36	4.59	4.59	0.016
152	0.36	4.61	4.61	0.016
153	0.36	4.62	4.62	0.016
154	0.36	4.64	4.64	0.016
155	0.36	4.65	4.65	0.015
156	0.36	4.67	4.67	0.015
157	0.36	4.69	4.69	0.015
158	0.36	4.70	4.70	0.015
159	0.36	4.72	4.72	0.015
160	0.35	4.73	4.73	0.015
161	0.35	4.75	4.75	0.015
162	0.35	4.76	4.76	0.015
163	0.35	4.78	4.78	0.015
164	0.35	4.79	4.79	0.015
165	0.35	4.81	4.81	0.015
166	0.35	4.82	4.82	0.015
167	0.35	4.84	4.84	0.015
168	0.35	4.85	4.85	0.015
169	0.35	4.87	4.87	0.015
170	0.34	4.88	4.88	0.015
171	0.34	4.90	4.90	0.015
172	0.34	4.91	4.91	0.015
173	0.34	4.92	4.92	0.015
174	0.34	4.94	4.94	0.015
175	0.34	4.95	4.95	0.015
176	0.34	4.97	4.97	0.015
177	0.34	4.98	4.98	0.014
178	0.34	5.00	5.00	0.014
179	0.34	5.01	5.01	0.014
180	0.34	5.03	5.03	0.014
181	0.33	5.04	5.04	0.014
182	0.33	5.05	5.05	0.014
183	0.33	5.07	5.07	0.014
184	0.33	5.08	5.08	0.014
185	0.33	5.10	5.10	0.014
186	0.33	5.11	5.11	0.014
187	0.33	5.13	5.13	0.014
188	0.33	5.14	5.14	0.014
189	0.33	5.15	5.15	0.014
190	0.33	5.17	5.17	0.014
191	0.33	5.18	5.18	0.014
192	0.32	5.20	5.20	0.014
193	0.32	5.21	5.21	0.014
194	0.32	5.22	5.22	0.014
195	0.32	5.24	5.24	0.014
196	0.32	5.25	5.25	0.014
197	0.32	5.26	5.26	0.014
198	0.32	5.28	5.28	0.014

199	0.32	5.29	5.29	0.014
200	0.32	5.31	5.31	0.014
201	0.32	5.32	5.32	0.014
202	0.32	5.33	5.33	0.014
203	0.32	5.35	5.35	0.014
204	0.32	5.36	5.36	0.014
205	0.31	5.37	5.37	0.013
206	0.31	5.39	5.39	0.013
207	0.31	5.40	5.40	0.013
208	0.31	5.41	5.41	0.013
209	0.31	5.43	5.43	0.013
210	0.31	5.44	5.44	0.013
211	0.31	5.45	5.45	0.013
212	0.31	5.47	5.47	0.013
213	0.31	5.48	5.48	0.013
214	0.31	5.49	5.49	0.013
215	0.31	5.51	5.51	0.013
216	0.31	5.52	5.52	0.013
217	0.31	5.53	5.53	0.013
218	0.31	5.55	5.55	0.013
219	0.30	5.56	5.56	0.013
220	0.30	5.57	5.57	0.013
221	0.30	5.59	5.58	0.013
222	0.30	5.60	5.60	0.013
223	0.30	5.61	5.61	0.013
224	0.30	5.62	5.62	0.013
225	0.30	5.64	5.64	0.013
226	0.30	5.65	5.65	0.013
227	0.30	5.66	5.66	0.013
228	0.30	5.68	5.67	0.013
229	0.30	5.69	5.69	0.013
230	0.30	5.70	5.70	0.013
231	0.30	5.71	5.71	0.013
232	0.30	5.73	5.73	0.013
233	0.30	5.74	5.74	0.013
234	0.29	5.75	5.75	0.013
235	0.29	5.76	5.76	0.013
236	0.29	5.78	5.78	0.013
237	0.29	5.79	5.79	0.013
238	0.29	5.80	5.80	0.013
239	0.29	5.81	5.81	0.013
240	0.29	5.83	5.83	0.012
241	0.29	5.84	5.84	0.012
242	0.29	5.85	5.85	0.012
243	0.29	5.86	5.86	0.012
244	0.29	5.88	5.88	0.012
245	0.29	5.89	5.89	0.012
246	0.29	5.90	5.90	0.012
247	0.29	5.91	5.91	0.012
248	0.29	5.93	5.93	0.012
249	0.29	5.94	5.94	0.012
250	0.29	5.95	5.95	0.012
251	0.29	5.96	5.96	0.012
252	0.28	5.97	5.97	0.012
253	0.28	5.99	5.99	0.012
254	0.28	6.00	6.00	0.012

255	0.28	6.01	6.01	0.012
256	0.28	6.02	6.02	0.012
257	0.28	6.04	6.03	0.012
258	0.28	6.05	6.05	0.012
259	0.28	6.06	6.06	0.012
260	0.28	6.07	6.07	0.012
261	0.28	6.08	6.08	0.012
262	0.28	6.10	6.09	0.012
263	0.28	6.11	6.11	0.012
264	0.28	6.12	6.12	0.012
265	0.28	6.13	6.13	0.012
266	0.28	6.14	6.14	0.012
267	0.28	6.15	6.15	0.012
268	0.28	6.17	6.17	0.012
269	0.28	6.18	6.18	0.012
270	0.28	6.19	6.19	0.012
271	0.27	6.20	6.20	0.012
272	0.27	6.21	6.21	0.012
273	0.27	6.23	6.23	0.012
274	0.27	6.24	6.24	0.012
275	0.27	6.25	6.25	0.012
276	0.27	6.26	6.26	0.012
277	0.27	6.27	6.27	0.012
278	0.27	6.28	6.28	0.012
279	0.27	6.30	6.30	0.012
280	0.27	6.31	6.31	0.012
281	0.27	6.32	6.32	0.012
282	0.27	6.33	6.33	0.012
283	0.27	6.34	6.34	0.012
284	0.27	6.35	6.35	0.012
285	0.27	6.36	6.36	0.011
286	0.27	6.38	6.38	0.011
287	0.27	6.39	6.39	0.011
288	0.27	6.40	6.40	0.011

Time = 24.00 Hours Total unit rainfall = 6.40(In)

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0114	0.0023	0.0091
2	0.0114	0.0023	0.0091
3	0.0115	0.0023	0.0092
4	0.0115	0.0023	0.0092
5	0.0115	0.0023	0.0092
6	0.0116	0.0023	0.0092
7	0.0116	0.0023	0.0093
8	0.0116	0.0023	0.0093
9	0.0117	0.0024	0.0093
10	0.0117	0.0024	0.0093
11	0.0117	0.0024	0.0094
12	0.0117	0.0024	0.0094
13	0.0118	0.0024	0.0094
14	0.0118	0.0024	0.0094
15	0.0119	0.0024	0.0095
16	0.0119	0.0024	0.0095

17	0.0119	0.0024	0.0095
18	0.0119	0.0024	0.0095
19	0.0120	0.0024	0.0096
20	0.0120	0.0024	0.0096
21	0.0121	0.0024	0.0096
22	0.0121	0.0024	0.0096
23	0.0121	0.0025	0.0097
24	0.0121	0.0025	0.0097
25	0.0122	0.0025	0.0097
26	0.0122	0.0025	0.0097
27	0.0123	0.0025	0.0098
28	0.0123	0.0025	0.0098
29	0.0123	0.0025	0.0098
30	0.0124	0.0025	0.0099
31	0.0124	0.0025	0.0099
32	0.0124	0.0025	0.0099
33	0.0125	0.0025	0.0100
34	0.0125	0.0025	0.0100
35	0.0126	0.0025	0.0100
36	0.0126	0.0025	0.0100
37	0.0126	0.0026	0.0101
38	0.0127	0.0026	0.0101
39	0.0127	0.0026	0.0101
40	0.0127	0.0026	0.0102
41	0.0128	0.0026	0.0102
42	0.0128	0.0026	0.0102
43	0.0129	0.0026	0.0103
44	0.0129	0.0026	0.0103
45	0.0130	0.0026	0.0103
46	0.0130	0.0026	0.0104
47	0.0131	0.0026	0.0104
48	0.0131	0.0026	0.0104
49	0.0131	0.0027	0.0105
50	0.0132	0.0027	0.0105
51	0.0132	0.0027	0.0106
52	0.0133	0.0027	0.0106
53	0.0133	0.0027	0.0106
54	0.0134	0.0027	0.0107
55	0.0134	0.0027	0.0107
56	0.0135	0.0027	0.0107
57	0.0135	0.0027	0.0108
58	0.0135	0.0027	0.0108
59	0.0136	0.0028	0.0109
60	0.0136	0.0028	0.0109
61	0.0137	0.0028	0.0109
62	0.0137	0.0028	0.0110
63	0.0138	0.0028	0.0110
64	0.0138	0.0028	0.0110
65	0.0139	0.0028	0.0111
66	0.0140	0.0028	0.0111
67	0.0140	0.0028	0.0112
68	0.0141	0.0028	0.0112
69	0.0141	0.0029	0.0113
70	0.0142	0.0029	0.0113
71	0.0142	0.0029	0.0114
72	0.0143	0.0029	0.0114

73	0.0144	0.0029	0.0115
74	0.0144	0.0029	0.0115
75	0.0145	0.0029	0.0116
76	0.0145	0.0029	0.0116
77	0.0146	0.0030	0.0117
78	0.0146	0.0030	0.0117
79	0.0147	0.0030	0.0118
80	0.0148	0.0030	0.0118
81	0.0149	0.0030	0.0119
82	0.0149	0.0030	0.0119
83	0.0150	0.0030	0.0120
84	0.0150	0.0030	0.0120
85	0.0151	0.0031	0.0121
86	0.0152	0.0031	0.0121
87	0.0153	0.0031	0.0122
88	0.0153	0.0031	0.0122
89	0.0154	0.0031	0.0123
90	0.0155	0.0031	0.0123
91	0.0155	0.0031	0.0124
92	0.0156	0.0032	0.0124
93	0.0157	0.0032	0.0125
94	0.0158	0.0032	0.0126
95	0.0159	0.0032	0.0127
96	0.0159	0.0032	0.0127
97	0.0160	0.0032	0.0128
98	0.0161	0.0032	0.0128
99	0.0162	0.0033	0.0129
100	0.0162	0.0033	0.0130
101	0.0164	0.0033	0.0130
102	0.0164	0.0033	0.0131
103	0.0165	0.0033	0.0132
104	0.0166	0.0034	0.0132
105	0.0167	0.0034	0.0133
106	0.0168	0.0034	0.0134
107	0.0169	0.0034	0.0135
108	0.0170	0.0034	0.0135
109	0.0171	0.0035	0.0136
110	0.0172	0.0035	0.0137
111	0.0173	0.0035	0.0138
112	0.0174	0.0035	0.0139
113	0.0175	0.0035	0.0140
114	0.0176	0.0036	0.0140
115	0.0177	0.0036	0.0141
116	0.0178	0.0036	0.0142
117	0.0180	0.0036	0.0143
118	0.0180	0.0036	0.0144
119	0.0182	0.0037	0.0145
120	0.0183	0.0037	0.0146
121	0.0184	0.0037	0.0147
122	0.0185	0.0037	0.0148
123	0.0187	0.0038	0.0149
124	0.0188	0.0038	0.0150
125	0.0190	0.0038	0.0151
126	0.0190	0.0039	0.0152
127	0.0192	0.0039	0.0153
128	0.0193	0.0039	0.0154

129	0.0195	0.0039	0.0156
130	0.0196	0.0040	0.0157
131	0.0198	0.0040	0.0158
132	0.0199	0.0040	0.0159
133	0.0201	0.0041	0.0161
134	0.0203	0.0041	0.0162
135	0.0205	0.0041	0.0163
136	0.0206	0.0042	0.0164
137	0.0208	0.0042	0.0166
138	0.0210	0.0042	0.0167
139	0.0212	0.0043	0.0169
140	0.0213	0.0043	0.0170
141	0.0216	0.0044	0.0172
142	0.0217	0.0044	0.0174
143	0.0220	0.0045	0.0176
144	0.0222	0.0045	0.0177
145	0.0175	0.0035	0.0139
146	0.0176	0.0036	0.0141
147	0.0179	0.0036	0.0143
148	0.0181	0.0037	0.0144
149	0.0184	0.0037	0.0147
150	0.0186	0.0038	0.0148
151	0.0189	0.0038	0.0151
152	0.0191	0.0039	0.0153
153	0.0195	0.0039	0.0156
154	0.0197	0.0040	0.0157
155	0.0201	0.0041	0.0161
156	0.0203	0.0041	0.0162
157	0.0208	0.0042	0.0166
158	0.0210	0.0043	0.0168
159	0.0215	0.0044	0.0172
160	0.0218	0.0044	0.0174
161	0.0223	0.0045	0.0178
162	0.0226	0.0046	0.0181
163	0.0232	0.0047	0.0185
164	0.0236	0.0048	0.0188
165	0.0242	0.0049	0.0193
166	0.0246	0.0050	0.0196
167	0.0253	0.0051	0.0202
168	0.0257	0.0052	0.0205
169	0.0268	0.0054	0.0214
170	0.0273	0.0055	0.0218
171	0.0283	0.0057	0.0226
172	0.0288	0.0058	0.0230
173	0.0300	0.0061	0.0239
174	0.0306	0.0062	0.0244
175	0.0320	0.0065	0.0255
176	0.0327	0.0066	0.0261
177	0.0343	0.0069	0.0274
178	0.0352	0.0071	0.0281
179	0.0373	0.0075	0.0297
180	0.0384	0.0078	0.0306
181	0.0409	0.0083	0.0327
182	0.0424	0.0086	0.0338
183	0.0458	0.0093	0.0366
184	0.0478	0.0097	0.0382

185	0.0523	0.0106	0.0418
186	0.0553	0.0112	0.0441
187	0.0628	0.0127	0.0501
188	0.0677	0.0137	0.0540
189	0.0815	0.0165	0.0651
190	0.0920	0.0184*	0.0737
191	0.1316	0.0184*	0.1132
192	0.1809	0.0184*	0.1625
193	0.5662	0.0184*	0.5479
194	0.1072	0.0184*	0.0888
195	0.0737	0.0149	0.0588
196	0.0587	0.0119	0.0468
197	0.0501	0.0101	0.0400
198	0.0440	0.0089	0.0351
199	0.0396	0.0080	0.0316
200	0.0362	0.0073	0.0289
201	0.0335	0.0068	0.0267
202	0.0313	0.0063	0.0249
203	0.0294	0.0059	0.0234
204	0.0278	0.0056	0.0222
205	0.0262	0.0053	0.0209
206	0.0250	0.0050	0.0199
207	0.0239	0.0048	0.0191
208	0.0229	0.0046	0.0183
209	0.0221	0.0045	0.0176
210	0.0213	0.0043	0.0170
211	0.0206	0.0042	0.0164
212	0.0199	0.0040	0.0159
213	0.0193	0.0039	0.0154
214	0.0188	0.0038	0.0150
215	0.0182	0.0037	0.0146
216	0.0178	0.0036	0.0142
217	0.0223	0.0045	0.0178
218	0.0219	0.0044	0.0175
219	0.0215	0.0043	0.0171
220	0.0211	0.0043	0.0168
221	0.0207	0.0042	0.0165
222	0.0204	0.0041	0.0163
223	0.0200	0.0041	0.0160
224	0.0197	0.0040	0.0157
225	0.0194	0.0039	0.0155
226	0.0191	0.0039	0.0153
227	0.0189	0.0038	0.0150
228	0.0186	0.0038	0.0148
229	0.0183	0.0037	0.0146
230	0.0181	0.0037	0.0144
231	0.0179	0.0036	0.0143
232	0.0177	0.0036	0.0141
233	0.0174	0.0035	0.0139
234	0.0172	0.0035	0.0137
235	0.0170	0.0034	0.0136
236	0.0168	0.0034	0.0134
237	0.0166	0.0034	0.0133
238	0.0165	0.0033	0.0131
239	0.0163	0.0033	0.0130
240	0.0161	0.0033	0.0129

241	0.0160	0.0032	0.0127
242	0.0158	0.0032	0.0126
243	0.0156	0.0032	0.0125
244	0.0155	0.0031	0.0124
245	0.0154	0.0031	0.0123
246	0.0152	0.0031	0.0121
247	0.0151	0.0030	0.0120
248	0.0149	0.0030	0.0119
249	0.0148	0.0030	0.0118
250	0.0147	0.0030	0.0117
251	0.0146	0.0029	0.0116
252	0.0144	0.0029	0.0115
253	0.0143	0.0029	0.0114
254	0.0142	0.0029	0.0113
255	0.0141	0.0029	0.0112
256	0.0140	0.0028	0.0112
257	0.0139	0.0028	0.0111
258	0.0138	0.0028	0.0110
259	0.0137	0.0028	0.0109
260	0.0136	0.0027	0.0108
261	0.0135	0.0027	0.0108
262	0.0134	0.0027	0.0107
263	0.0133	0.0027	0.0106
264	0.0132	0.0027	0.0105
265	0.0131	0.0027	0.0105
266	0.0130	0.0026	0.0104
267	0.0129	0.0026	0.0103
268	0.0129	0.0026	0.0103
269	0.0128	0.0026	0.0102
270	0.0127	0.0026	0.0101
271	0.0126	0.0026	0.0101
272	0.0125	0.0025	0.0100
273	0.0125	0.0025	0.0099
274	0.0124	0.0025	0.0099
275	0.0123	0.0025	0.0098
276	0.0122	0.0025	0.0098
277	0.0122	0.0025	0.0097
278	0.0121	0.0024	0.0097
279	0.0120	0.0024	0.0096
280	0.0120	0.0024	0.0095
281	0.0119	0.0024	0.0095
282	0.0118	0.0024	0.0094
283	0.0118	0.0024	0.0094
284	0.0117	0.0024	0.0093
285	0.0116	0.0024	0.0093
286	0.0116	0.0023	0.0092
287	0.0115	0.0023	0.0092
288	0.0115	0.0023	0.0091
	6.3986	1.1675	5.2310

Total soil rain loss = 1.17(In)
Total effective rainfall = 5.23(In)
Peak flow rate in flood hydrograph = 135.16(CFS)

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24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0007	0.10	Q				
0+10	0.0028	0.30	Q				
0+15	0.0068	0.59	Q				
0+20	0.0136	0.98	Q				
0+25	0.0242	1.53	Q				
0+30	0.0400	2.30	Q				
0+35	0.0629	3.32	Q				
0+40	0.0930	4.37	Q				
0+45	0.1301	5.39	VQ				
0+50	0.1712	5.97	VQ				
0+55	0.2165	6.57	VQ				
1+ 0	0.2651	7.06	VQ				
1+ 5	0.3166	7.48	VQ				
1+10	0.3705	7.83	VQ				
1+15	0.4266	8.14	VQ				
1+20	0.4847	8.44	VQ				
1+25	0.5446	8.70	VQ				
1+30	0.6062	8.94	VQ				
1+35	0.6693	9.17	VQ				
1+40	0.7338	9.37	VQ				
1+45	0.7997	9.57	VQ				
1+50	0.8669	9.76	VQ				
1+55	0.9353	9.93	VQ				
2+ 0	1.0048	10.09	V Q				
2+ 5	1.0753	10.24	V Q				
2+10	1.1469	10.38	V Q				
2+15	1.2193	10.52	|VQ				
2+20	1.2927	10.65	|VQ				
2+25	1.3669	10.78	|VQ				
2+30	1.4420	10.90	|VQ				
2+35	1.5179	11.02	|VQ				
2+40	1.5945	11.13	|VQ				
2+45	1.6719	11.24	|VQ				
2+50	1.7501	11.35	|VQ				
2+55	1.8289	11.45	|VQ				
3+ 0	1.9085	11.55	|VQ				
3+ 5	1.9887	11.65	|VQ				
3+10	2.0695	11.74	|VQ				
3+15	2.1510	11.83	|VQ				
3+20	2.2331	11.92	|VQ				
3+25	2.3158	12.00	|VQ				
3+30	2.3990	12.08	|VQ				
3+35	2.4828	12.17	| Q				
3+40	2.5671	12.24	| Q				
3+45	2.6520	12.33	| Q				
3+50	2.7375	12.41	| Q				
3+55	2.8234	12.48	| Q				

4+ 0	2.9098	12.55	Q			
4+ 5	2.9967	12.62	Q			
4+10	3.0841	12.69	Q			
4+15	3.1720	12.76	Q			
4+20	3.2603	12.83	Q			
4+25	3.3492	12.90	Q			
4+30	3.4385	12.97	Q			
4+35	3.5283	13.04	Q			
4+40	3.6186	13.11	Q			
4+45	3.7094	13.18	QV			
4+50	3.8007	13.25	QV			
4+55	3.8924	13.32	QV			
5+ 0	3.9846	13.38	QV			
5+ 5	4.0772	13.45	QV			
5+10	4.1703	13.52	QV			
5+15	4.2639	13.58	QV			
5+20	4.3579	13.65	QV			
5+25	4.4523	13.72	QV			
5+30	4.5473	13.78	QV			
5+35	4.6427	13.85	QV			
5+40	4.7385	13.92	QV			
5+45	4.8349	13.99	QV			
5+50	4.9316	14.05	Q V			
5+55	5.0289	14.12	Q V			
6+ 0	5.1266	14.19	Q V			
6+ 5	5.2248	14.26	Q V			
6+10	5.3235	14.33	Q V			
6+15	5.4227	14.40	Q V			
6+20	5.5224	14.48	Q V			
6+25	5.6225	14.54	Q V			
6+30	5.7231	14.60	Q V			
6+35	5.8241	14.66	Q V			
6+40	5.9255	14.73	Q V			
6+45	6.0274	14.79	Q V			
6+50	6.1297	14.86	Q V			
6+55	6.2324	14.92	Q V			
7+ 0	6.3357	14.99	Q V			
7+ 5	6.4394	15.06	Q V			
7+10	6.5435	15.12	Q V			
7+15	6.6482	15.19	Q V			
7+20	6.7533	15.26	Q V			
7+25	6.8589	15.33	Q V			
7+30	6.9650	15.40	Q V			
7+35	7.0715	15.47	Q V			
7+40	7.1785	15.54	Q V			
7+45	7.2861	15.61	Q V			
7+50	7.3940	15.68	Q V			
7+55	7.5025	15.75	Q V			
8+ 0	7.6115	15.82	Q V			
8+ 5	7.7210	15.90	Q V			
8+10	7.8309	15.97	Q V			
8+15	7.9414	16.04	Q V			
8+20	8.0525	16.12	Q V			
8+25	8.1640	16.20	Q V			
8+30	8.2761	16.27	Q V			
8+35	8.3887	16.35	Q V			

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 8+40       8.5019     16.43  |  Q   V  |          |          |          |
 8+45       8.6157     16.52  |  Q   V  |          |          |          |
 8+50       8.7300     16.60  |  Q   V  |          |          |          |
 8+55       8.8449     16.68  |  Q   V  |          |          |          |
 9+ 0       8.9604     16.77  |  Q   V  |          |          |          |
 9+ 5       9.0764     16.85  |  Q   V  |          |          |          |
 9+10       9.1931     16.94  |  Q   V  |          |          |          |
 9+15       9.3104     17.03  |  Q   V  |          |          |          |
 9+20       9.4283     17.12  |  Q   V  |          |          |          |
 9+25       9.5469     17.21  |  Q   V  |          |          |          |
 9+30       9.6660     17.31  |  Q   V  |          |          |          |
 9+35       9.7859     17.40  |  Q    V |          |          |          |
 9+40       9.9064     17.50  |  Q    V |          |          |          |
 9+45      10.0276     17.60  |  Q    V |          |          |          |
 9+50      10.1494     17.69  |  Q    V |          |          |          |
 9+55      10.2720     17.80  |  Q    V |          |          |          |
10+ 0      10.3953     17.90  |  Q    V |          |          |          |
10+ 5      10.5193     18.00  |  Q    V |          |          |          |
10+10      10.6440     18.11  |  Q    V |          |          |          |
10+15      10.7695     18.22  |  Q    V |          |          |          |
10+20      10.8957     18.33  |  Q     V|          |          |          |
10+25      11.0227     18.44  |  Q     V|          |          |          |
10+30      11.1505     18.56  |  Q     V|          |          |          |
10+35      11.2792     18.68  |  Q     V|          |          |          |
10+40      11.4086     18.79  |  Q     V|          |          |          |
10+45      11.5388     18.91  |  Q     V|          |          |          |
10+50      11.6699     19.03  |  Q     V|          |          |          |
10+55      11.8018     19.16  |  Q     V|          |          |          |
11+ 0      11.9346     19.28  |  Q     V|          |          |          |
11+ 5      12.0683     19.41  |  Q     V|          |          |          |
11+10      12.2028     19.54  |  Q      V          |          |          |
11+15      12.3383     19.68  |  Q      V          |          |          |
11+20      12.4748     19.81  |  Q      V          |          |          |
11+25      12.6122     19.95  |  Q      V          |          |          |
11+30      12.7506     20.10  |   Q     V          |          |          |
11+35      12.8900     20.24  |   Q     V          |          |          |
11+40      13.0305     20.39  |   Q     V          |          |          |
11+45      13.1720     20.55  |   Q     V          |          |          |
11+50      13.3146     20.70  |   Q     |V         |          |          |
11+55      13.4583     20.87  |   Q     |V         |          |          |
12+ 0      13.6031     21.03  |   Q     |V         |          |          |
12+ 5      13.7488     21.16  |   Q     |V         |          |          |
12+10      13.8951     21.24  |   Q     |V         |          |          |
12+15      14.0417     21.30  |   Q     |V         |          |          |
12+20      14.1885     21.30  |   Q     |V         |          |          |
12+25      14.3348     21.25  |   Q     |V         |          |          |
12+30      14.4802     21.11  |   Q     |V         |          |          |
12+35      14.6239     20.86  |   Q     | V        |          |          |
12+40      14.7658     20.61  |   Q     | V        |          |          |
12+45      14.9061     20.37  |   Q     | V        |          |          |
12+50      15.0462     20.34  |   Q     | V        |          |          |
12+55      15.1860     20.30  |   Q     | V        |          |          |
13+ 0      15.3260     20.32  |   Q     | V        |          |          |
13+ 5      15.4664     20.38  |   Q     | V        |          |          |
13+10      15.6074     20.48  |   Q     | V        |          |          |
13+15      15.7493     20.60  |   Q     |  V       |          |          |
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13+20	15.8921	20.74	Q	V			
13+25	16.0360	20.90	Q	V			
13+30	16.1812	21.08	Q	V			
13+35	16.3279	21.29	Q	V			
13+40	16.4760	21.51	Q	V			
13+45	16.6258	21.75	Q	V			
13+50	16.7774	22.01	Q	V			
13+55	16.9309	22.29	Q	V			
14+ 0	17.0864	22.58	Q	V			
14+ 5	17.2442	22.91	Q	V			
14+10	17.4044	23.26	Q	V			
14+15	17.5672	23.64	Q	V			
14+20	17.7327	24.03	Q	V			
14+25	17.9012	24.47	Q	V			
14+30	18.0729	24.93	Q	V			
14+35	18.2480	25.43	Q	V			
14+40	18.4269	25.97	Q	V			
14+45	18.6097	26.55	Q	V			
14+50	18.7967	27.15	Q	V			
14+55	18.9882	27.82	Q	V			
15+ 0	19.1847	28.52	Q	V			
15+ 5	19.3864	29.30	Q	V			
15+10	19.5940	30.13	Q	V			
15+15	19.8079	31.06	Q	V			
15+20	20.0288	32.07	Q	V			
15+25	20.2576	33.22	Q	V			
15+30	20.4950	34.48	Q	V			
15+35	20.7425	35.93	Q	V			
15+40	21.0013	37.57	Q	V			
15+45	21.2736	39.54	Q	V			
15+50	21.5619	41.87	Q	V			
15+55	21.8719	45.00	Q	V			
16+ 0	22.2124	49.44	Q	V			
16+ 5	22.6209	59.32	Q	V			
16+10	23.1036	70.10	Q	V			
16+15	23.6528	79.73	Q	V			
16+20	24.2840	91.66	Q	V			
16+25	25.0117	105.66	Q	V			
16+30	25.8477	121.39	Q	V			
16+35	26.7786	135.16	Q	V			
16+40	27.7074	134.86	Q	V			
16+45	28.5802	126.74	Q	V			
16+50	29.2745	100.81	Q	V			
16+55	29.9380	96.34	Q	V			
17+ 0	30.5334	86.45	Q	V			
17+ 5	31.0777	79.04	Q	V			
17+10	31.5765	72.42	Q	V			
17+15	32.0409	67.43	Q	V			
17+20	32.4790	63.61	Q	V			
17+25	32.8910	59.83	Q	V			
17+30	33.2811	56.64	Q	V			
17+35	33.6508	53.69	Q	V			
17+40	34.0014	50.90	Q	V			
17+45	34.3381	48.90	Q	V			
17+50	34.6621	47.04	Q	V			
17+55	34.9707	44.80	Q	V			

18+ 0	35.2648	42.70	Q		V	
18+ 5	35.5468	40.95	Q		V	
18+10	35.8185	39.46	Q		V	
18+15	36.0820	38.27	Q		V	
18+20	36.3378	37.13	Q		V	
18+25	36.5875	36.25	Q		V	
18+30	36.8298	35.19	Q		V	
18+35	37.0689	34.71	Q		V	
18+40	37.3048	34.26	Q		V	
18+45	37.5363	33.61	Q		V	
18+50	37.7640	33.06	Q		V	
18+55	37.9871	32.40	Q		V	
19+ 0	38.2054	31.70	Q		V	
19+ 5	38.4193	31.05	Q		V	
19+10	38.6296	30.53	Q		V	
19+15	38.8353	29.87	Q		V	
19+20	39.0364	29.21	Q		V	
19+25	39.2319	28.38	Q		V	
19+30	39.4243	27.94	Q		V	
19+35	39.6135	27.47	Q		V	
19+40	39.7999	27.06	Q		V	
19+45	39.9836	26.67	Q		V	
19+50	40.1640	26.20	Q		V	
19+55	40.3392	25.44	Q		V	
20+ 0	40.5111	24.96	Q		V	
20+ 5	40.6807	24.62	Q		V	
20+10	40.8483	24.34	Q		V	
20+15	41.0141	24.07	Q		V	
20+20	41.1780	23.80	Q		V	
20+25	41.3400	23.51	Q		V	
20+30	41.4996	23.17	Q		V	
20+35	41.6573	22.91	Q		V	
20+40	41.8133	22.64	Q		V	
20+45	41.9671	22.33	Q		V	
20+50	42.1176	21.86	Q		V	
20+55	42.2659	21.53	Q		V	
21+ 0	42.4120	21.21	Q		V	
21+ 5	42.5564	20.96	Q		V	
21+10	42.6994	20.76	Q		V	
21+15	42.8410	20.56	Q		V	
21+20	42.9812	20.36	Q		V	
21+25	43.1201	20.16	Q		V	
21+30	43.2575	19.96	Q		V	
21+35	43.3932	19.70	Q		V	
21+40	43.5268	19.40	Q		V	
21+45	43.6591	19.21	Q		V	
21+50	43.7902	19.03	Q		V	
21+55	43.9201	18.85	Q		V	
22+ 0	44.0487	18.68	Q		V	
22+ 5	44.1760	18.49	Q		V	
22+10	44.3022	18.32	Q		V	
22+15	44.4269	18.12	Q		V	
22+20	44.5513	18.06	Q		V	
22+25	44.6693	17.14	Q		V	
22+30	44.7853	16.84	Q		V	
22+35	44.9000	16.65	Q		V	

22+40	45.0136	16.50	| Q	|	|	|	V |
22+45	45.1262	16.35	| Q	|	|	|	V |
22+50	45.2378	16.21	| Q	|	|	|	V |
22+55	45.3485	16.07	| Q	|	|	|	V |
23+ 0	45.4583	15.94	| Q	|	|	|	V |
23+ 5	45.5671	15.81	| Q	|	|	|	V |
23+10	45.6751	15.68	| Q	|	|	|	V |
23+15	45.7822	15.55	| Q	|	|	|	V |
23+20	45.8884	15.42	| Q	|	|	|	V |
23+25	45.9936	15.27	| Q	|	|	|	V |
23+30	46.0976	15.10	| Q	|	|	|	V |
23+35	46.1995	14.79	| Q	|	|	|	V |
23+40	46.3001	14.61	| Q	|	|	|	V |
23+45	46.3999	14.49	| Q	|	|	|	V |
23+50	46.4990	14.39	| Q	|	|	|	V |
23+55	46.5975	14.29	| Q	|	|	|	V |
24+ 0	46.6952	14.19	| Q	|	|	|	V |
24+ 5	46.7917	14.01	| Q	|	|	|	V |
24+10	46.8861	13.71	| Q	|	|	|	V |
24+15	46.9780	13.35	| Q	|	|	|	V |
24+20	47.0666	12.87	| Q	|	|	|	V |
24+25	47.1510	12.25	| Q	|	|	|	V |
24+30	47.2295	11.41	| Q	|	|	|	V|
24+35	47.3007	10.33	| Q	|	|	|	V|
24+40	47.3641	9.22	|Q	|	|	|	V|
24+45	47.4203	8.16	|Q	|	|	|	V|
24+50	47.4722	7.54	|Q	|	|	|	V|
24+55	47.5198	6.91	|Q	|	|	|	V|
25+ 0	47.5639	6.40	|Q	|	|	|	V|
25+ 5	47.6049	5.96	|Q	|	|	|	V|
25+10	47.6433	5.58	|Q	|	|	|	V|
25+15	47.6795	5.26	|Q	|	|	|	V|
25+20	47.7137	4.95	Q	|	|	|	V|
25+25	47.7459	4.68	Q	|	|	|	V|
25+30	47.7764	4.43	Q	|	|	|	V|
25+35	47.8053	4.20	Q	|	|	|	V|
25+40	47.8328	3.99	Q	|	|	|	V|
25+45	47.8590	3.79	Q	|	|	|	V|
25+50	47.8838	3.60	Q	|	|	|	V|
25+55	47.9074	3.43	Q	|	|	|	V|
26+ 0	47.9299	3.27	Q	|	|	|	V|
26+ 5	47.9513	3.12	Q	|	|	|	V|
26+10	47.9718	2.98	Q	|	|	|	V|
26+15	47.9914	2.84	Q	|	|	|	V|
26+20	48.0101	2.71	Q	|	|	|	V|
26+25	48.0279	2.59	Q	|	|	|	V|
26+30	48.0448	2.46	Q	|	|	|	V|
26+35	48.0612	2.38	Q	|	|	|	V|
26+40	48.0754	2.06	Q	|	|	|	V|
26+45	48.0888	1.95	Q	|	|	|	V|
26+50	48.1015	1.85	Q	|	|	|	V|
26+55	48.1136	1.75	Q	|	|	|	V|
27+ 0	48.1251	1.67	Q	|	|	|	V|
27+ 5	48.1360	1.59	Q	|	|	|	V|
27+10	48.1465	1.51	Q	|	|	|	V|
27+15	48.1564	1.44	Q	|	|	|	V|

27+20	48.1659	1.38	Q	|	|	|	V|
27+25	48.1750	1.32	Q	|	|	|	V|
27+30	48.1837	1.26	Q	|	|	|	V|
27+35	48.1920	1.21	Q	|	|	|	V|
27+40	48.2000	1.16	Q	|	|	|	V|
27+45	48.2076	1.11	Q	|	|	|	V|
27+50	48.2149	1.06	Q	|	|	|	V|
27+55	48.2219	1.01	Q	|	|	|	V|
28+ 0	48.2286	0.98	Q	|	|	|	V|
28+ 5	48.2351	0.94	Q	|	|	|	V|
28+10	48.2413	0.90	Q	|	|	|	V|
28+15	48.2472	0.87	Q	|	|	|	V|
28+20	48.2529	0.83	Q	|	|	|	V|
28+25	48.2584	0.79	Q	|	|	|	V|
28+30	48.2636	0.76	Q	|	|	|	V|
28+35	48.2687	0.73	Q	|	|	|	V|
28+40	48.2734	0.69	Q	|	|	|	V|
28+45	48.2780	0.66	Q	|	|	|	V|
28+50	48.2823	0.63	Q	|	|	|	V|
28+55	48.2865	0.60	Q	|	|	|	V|
29+ 0	48.2905	0.58	Q	|	|	|	V|
29+ 5	48.2943	0.55	Q	|	|	|	V|
29+10	48.2980	0.53	Q	|	|	|	V|
29+15	48.3014	0.51	Q	|	|	|	V|
29+20	48.3048	0.48	Q	|	|	|	V|
29+25	48.3079	0.46	Q	|	|	|	V|
29+30	48.3109	0.43	Q	|	|	|	V|
29+35	48.3137	0.41	Q	|	|	|	V|
29+40	48.3164	0.39	Q	|	|	|	V|
29+45	48.3190	0.37	Q	|	|	|	V|
29+50	48.3214	0.35	Q	|	|	|	V|
29+55	48.3237	0.33	Q	|	|	|	V|
30+ 0	48.3259	0.31	Q	|	|	|	V|
30+ 5	48.3279	0.29	Q	|	|	|	V|
30+10	48.3297	0.27	Q	|	|	|	V|
30+15	48.3315	0.25	Q	|	|	|	V|
30+20	48.3331	0.23	Q	|	|	|	V|
30+25	48.3346	0.22	Q	|	|	|	V|
30+30	48.3360	0.21	Q	|	|	|	V|
30+35	48.3374	0.20	Q	|	|	|	V|
30+40	48.3388	0.19	Q	|	|	|	V|
30+45	48.3400	0.18	Q	|	|	|	V|
30+50	48.3412	0.18	Q	|	|	|	V|
30+55	48.3424	0.17	Q	|	|	|	V|
31+ 0	48.3435	0.16	Q	|	|	|	V|
31+ 5	48.3445	0.15	Q	|	|	|	V|
31+10	48.3455	0.14	Q	|	|	|	V|
31+15	48.3465	0.14	Q	|	|	|	V|
31+20	48.3473	0.13	Q	|	|	|	V|
31+25	48.3482	0.12	Q	|	|	|	V|
31+30	48.3489	0.11	Q	|	|	|	V|
31+35	48.3497	0.11	Q	|	|	|	V|
31+40	48.3504	0.10	Q	|	|	|	V|
31+45	48.3511	0.10	Q	|	|	|	V|
31+50	48.3517	0.10	Q	|	|	|	V|
31+55	48.3524	0.09	Q	|	|	|	V|

32+ 0	48.3530	0.09	Q	|	|	|	V|
32+ 5	48.3536	0.09	Q	|	|	|	V|
32+10	48.3542	0.08	Q	|	|	|	V|
32+15	48.3547	0.08	Q	|	|	|	V|
32+20	48.3553	0.08	Q	|	|	|	V|
32+25	48.3558	0.08	Q	|	|	|	V|
32+30	48.3563	0.07	Q	|	|	|	V|
32+35	48.3568	0.07	Q	|	|	|	V|
32+40	48.3572	0.07	Q	|	|	|	V|
32+45	48.3577	0.06	Q	|	|	|	V|
32+50	48.3581	0.06	Q	|	|	|	V|
32+55	48.3585	0.06	Q	|	|	|	V|
33+ 0	48.3588	0.05	Q	|	|	|	V|
33+ 5	48.3592	0.05	Q	|	|	|	V|
33+10	48.3595	0.05	Q	|	|	|	V|
33+15	48.3598	0.05	Q	|	|	|	V|
33+20	48.3601	0.04	Q	|	|	|	V|
33+25	48.3604	0.04	Q	|	|	|	V|
33+30	48.3606	0.04	Q	|	|	|	V|
33+35	48.3609	0.03	Q	|	|	|	V|
33+40	48.3611	0.03	Q	|	|	|	V|
33+45	48.3613	0.03	Q	|	|	|	V|
33+50	48.3615	0.03	Q	|	|	|	V|
33+55	48.3616	0.02	Q	|	|	|	V|
34+ 0	48.3618	0.02	Q	|	|	|	V|
34+ 5	48.3619	0.02	Q	|	|	|	V|
34+10	48.3620	0.01	Q	|	|	|	V|
34+15	48.3621	0.01	Q	|	|	|	V|
34+20	48.3621	0.01	Q	|	|	|	V|
34+25	48.3622	0.01	Q	|	|	|	V|
34+30	48.3622	0.00	Q	|	|	|	V

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Appendix E

Kern County Hydrology Manual Excerpts

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Residential Landscaping (Lawn, Shrubs, etc.) - The pervious portions of commercial establishments, single and multiple family dwellings, trailer parks and schools where the predominant land cover is lawn, shrubbery and trees.

Row Crops - Lettuce, tomatoes, beets, tulips or any field crop planted in rows far enough apart that most of the soil surface is exposed to rainfall impact throughout the growing season. At plowing, planting and harvest times it is equivalent to fallow.

Small Grain - Wheat, oats, barley, flax, etc. planted in rows close enough that the soil surface is not exposed except during planting and shortly thereafter.

Legumes - Alfalfa, sweetclover, timothy, etc. and combinations are either planted in close rows or broadcast.

Fallow - Fallow land is land plowed but not yet seeded or tilled.

Woodland - grass - Areas with an open cover of broadleaf or coniferous trees usually live oak and pines, with the intervening ground space occupied by annual grasses or weeds. The trees may occur singly or in small clumps. Canopy density, the amount of ground surface shaded at high noon, is from 20 to 50 percent.

Woodland - Areas on which coniferous or broadleaf trees predominate. The canopy density is at least 50 percent. Open areas may have a cover of annual or perennial grasses or of brush. Herbaceous plant cover under the trees is usually sparse because of leaf or needle litter accumulation.

Chaparral - Land on which the principal vegetation consists of evergreen shrubs with broad, hard, stiff leaves such as manzonita, ceanothus and scrub oak. The brush cover is usually dense or moderately dense. Diffusely branched evergreen shrubs with fine needle-like leaves, such as chamise and redchank, with dense high growth are also included in this soil cover.

Annual Grass - Land on which the principal vegetation consists of annual grasses and weeds such as annual bromes, wild barley, soft chess, ryegrass and filaree.

Irrigated Pasture - Irrigated land planted to perennial grasses and legumes for production of forage and which is cultivated only to establish or renew the stand of plants. Dry land pasture is considered as annual grass.

Meadow - Land areas with seasonally high water table, locally called cienegas. Principal vegetation consists of sod-forming grasses interspersed with other plants.

Orchard (Deciduous) - Land planted to such deciduous trees as apples, apricots, pears, walnuts, and almonds.

Orchard (Evergreen) - Land planted to evergreen trees which include citrus and avocados and coniferous plantings.

Turf - Golf courses, parks and similar lands where the predominant cover is irrigated mowed close-grown turf grass. Parks in which trees are dense may be classified as woodland.

KERN COUNTY

HYDROLOGY MANUAL

SCS
COVER TYPE
DESCRIPTIONS

FIGURE C-1

Curve[1] Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		77	86	91	94
Chaparral, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparral, Narrowleaf (Chamise and Redskank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadows or Cienagas (Areas with seasonally high water table, principal vegatation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	71	78
Open Brush (Soft wood shrubs-buckwheat,sage,etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (4) (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawns, shrubs, etc.)	Good	39	61	74	80
Turf (Irrigated and mowed grass)	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80

KERN COUNTY
Hydrology Manual

CURVE NUMBERS FOR PERVIOUS AREAS

Curve[1] Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
AGRICULTURAL COVERS -					
Fallow (Bare Soil)		77	86	91	94
Close Seeded (alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Evergreen (Citrus, avacodos, etc.)	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Pasture (Grassland or range, continuos forage for grazing)	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Row Crops (Straight row, non-contoured)	Poor	72	81	88	91
	Good	67	78	85	89
Small Grain (Straight row, non-contoured)	Poor	65	76	84	88
	Good	63	75	83	87

Notes:

1. Average runoff condition, Ia = 0.2(S)

2. Poor: Heavily grazed, regularly burned areas, or areas of high burn potential. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.

   Fair: Moderate cover with 50 percent to 75 percent of the ground surface protected. In wooded areas the woods are grazed but not burned, and some forest litter covers the soil.

   Good: Heavy or dense cover with more than 75 percent of the ground surface protected. In wooded areas the woods are protected from grazing, litter and brush adequately cover soil.

3. See Figure C-1 for definition of cover types.

KERN COUNTY
Hydrology Manual

CURVE NUMBERS FOR PERVIOUS AREAS

ACTUAL IMPERVIOUS COVER

Land Use	Range-Percent	Recommended Value For Average Conditions-Percent (1)
Natural or Agriculture	0 - 0	0
Public Park	10 - 25	15
School	30 - 50	40
Single Family Residential: (2)		
2.5 acre lots	5 - 15	10
1 acre lots	10 - 25	20
2-3 DU/acre	20 - 40	30
3-5 DU/acre	30 - 50	40
5-8 DU/acre	35 - 55	50
8-10 DU/acre	50 - 70	60
More than 10 DU/acre	65 - 90	80
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Parks	60 - 85	75
Commercial, Downtown Business or Industrial	80 - 100	90

Notes:

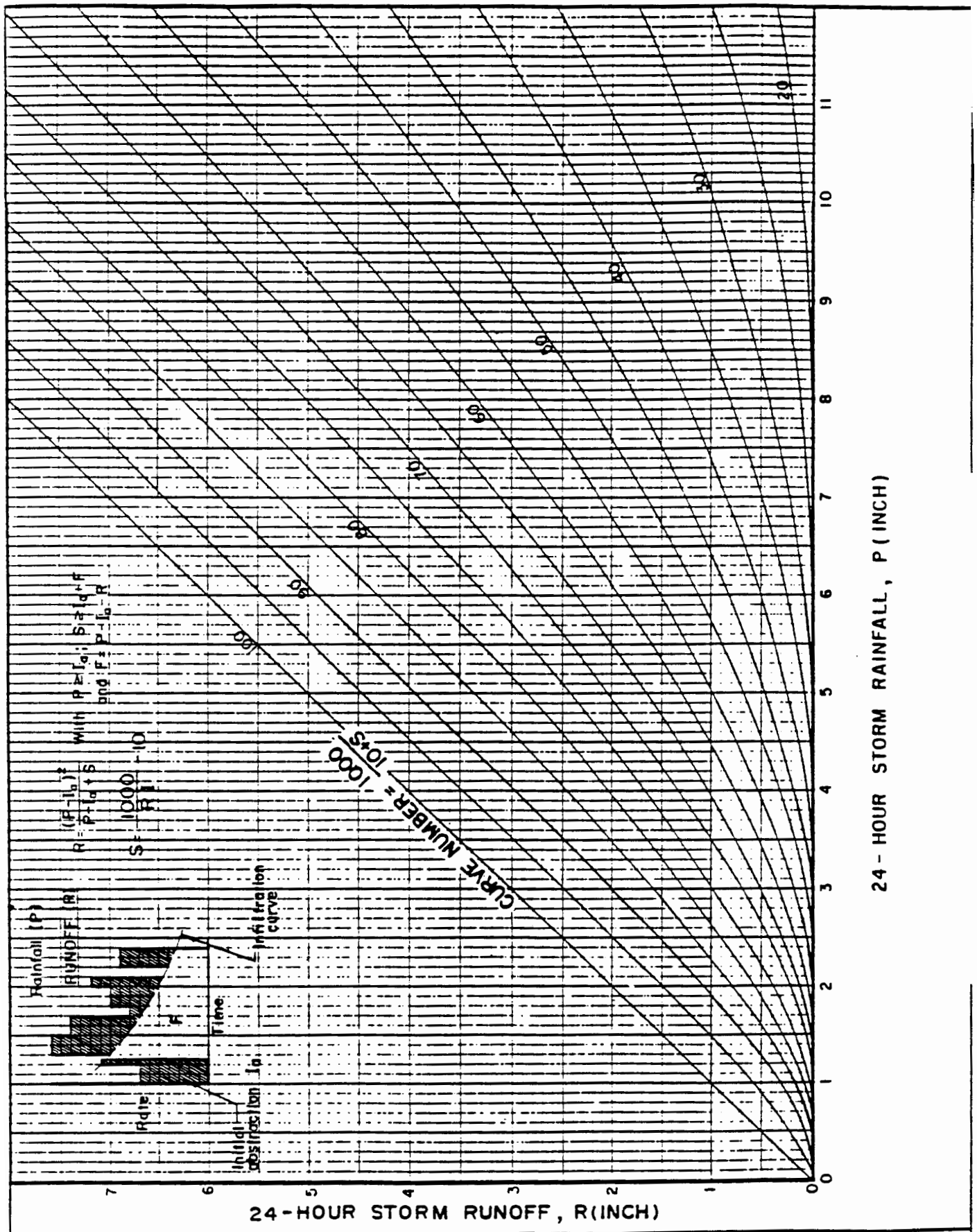
1) Recommended values are based on average conditions which may not apply to a particular study. The percentage impervious may vary greatly even on comparable study sized lots due to differences in in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area shall always be made, and a review of aerial photos, where available, may assist in estimating the percentage of impervious cover in developed areas.

2) For typical equestrian subdivisions increase impervious area 5% over the values recommended in the table above.

KERN COUNTY
Hydrology Manual

ACTUAL IMPERVIOUS COVER FOR DEVELOPED AREAS

FIGURE C-3

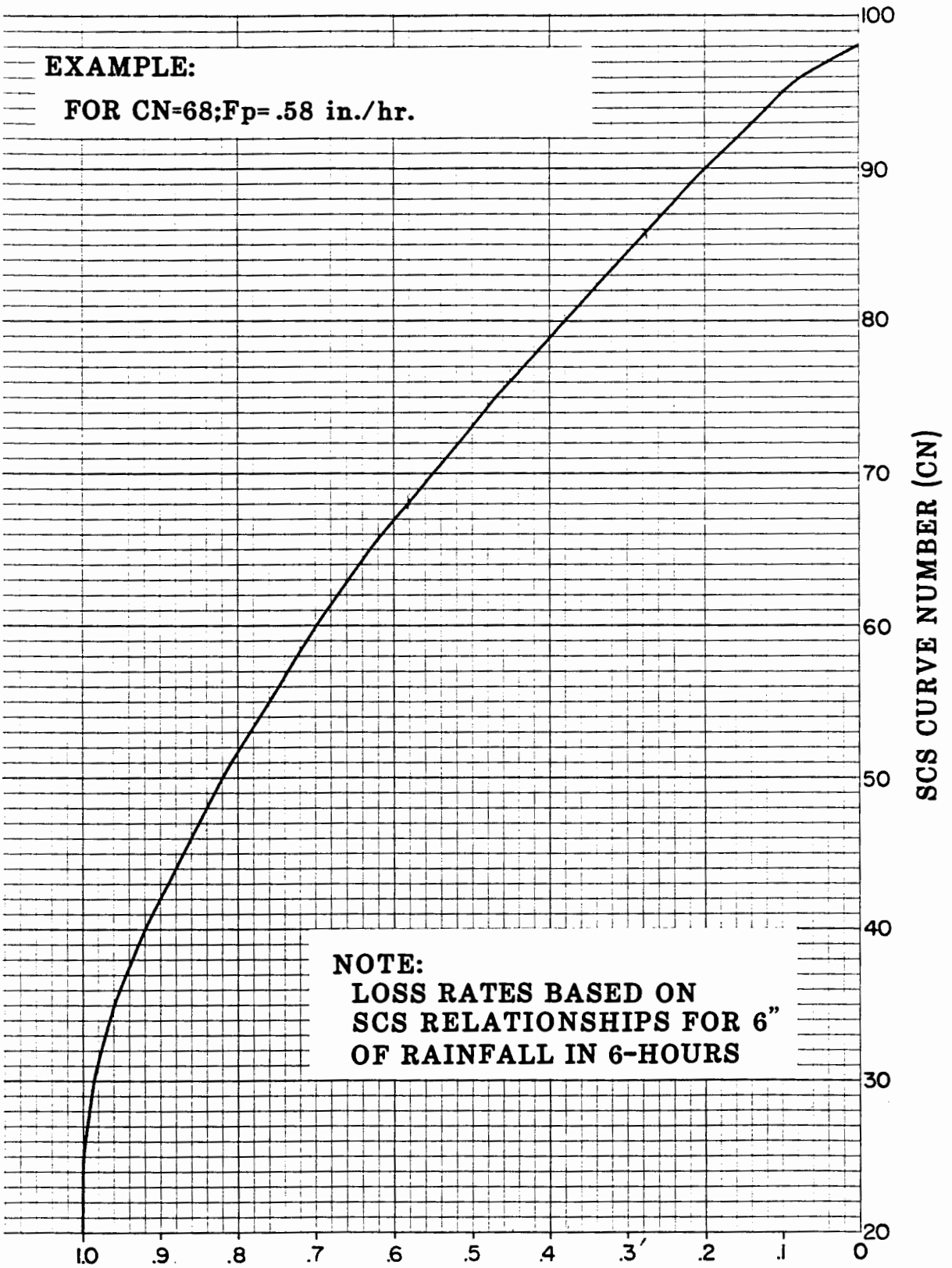


KERN COUNTY

HYDROLOGY MANUAL

SCS 24 - HOUR STORM RAINFALL - RUNOFF RELATIONSHIPS

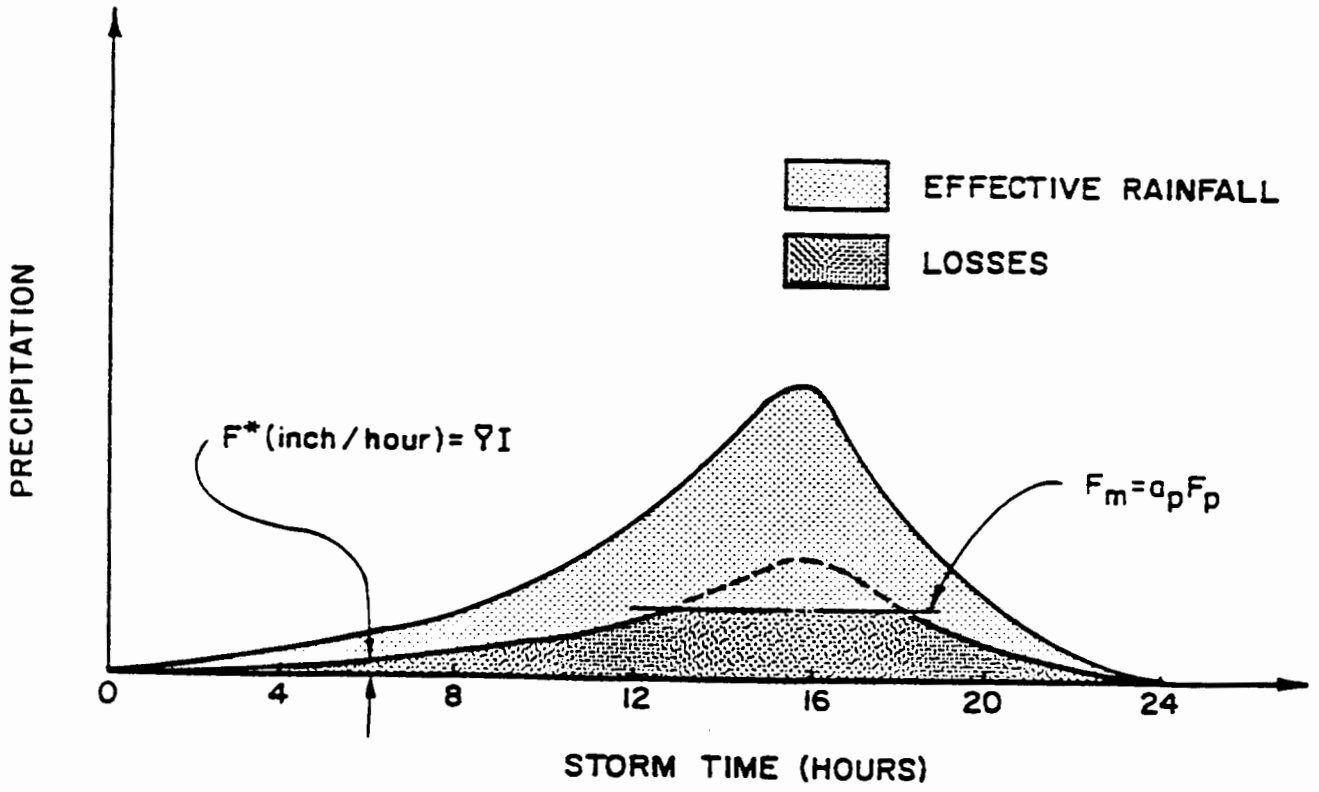
FIGURE C-4



KERN COUNTY
Hydrology Manual

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS SCS CURVE NUMBERS

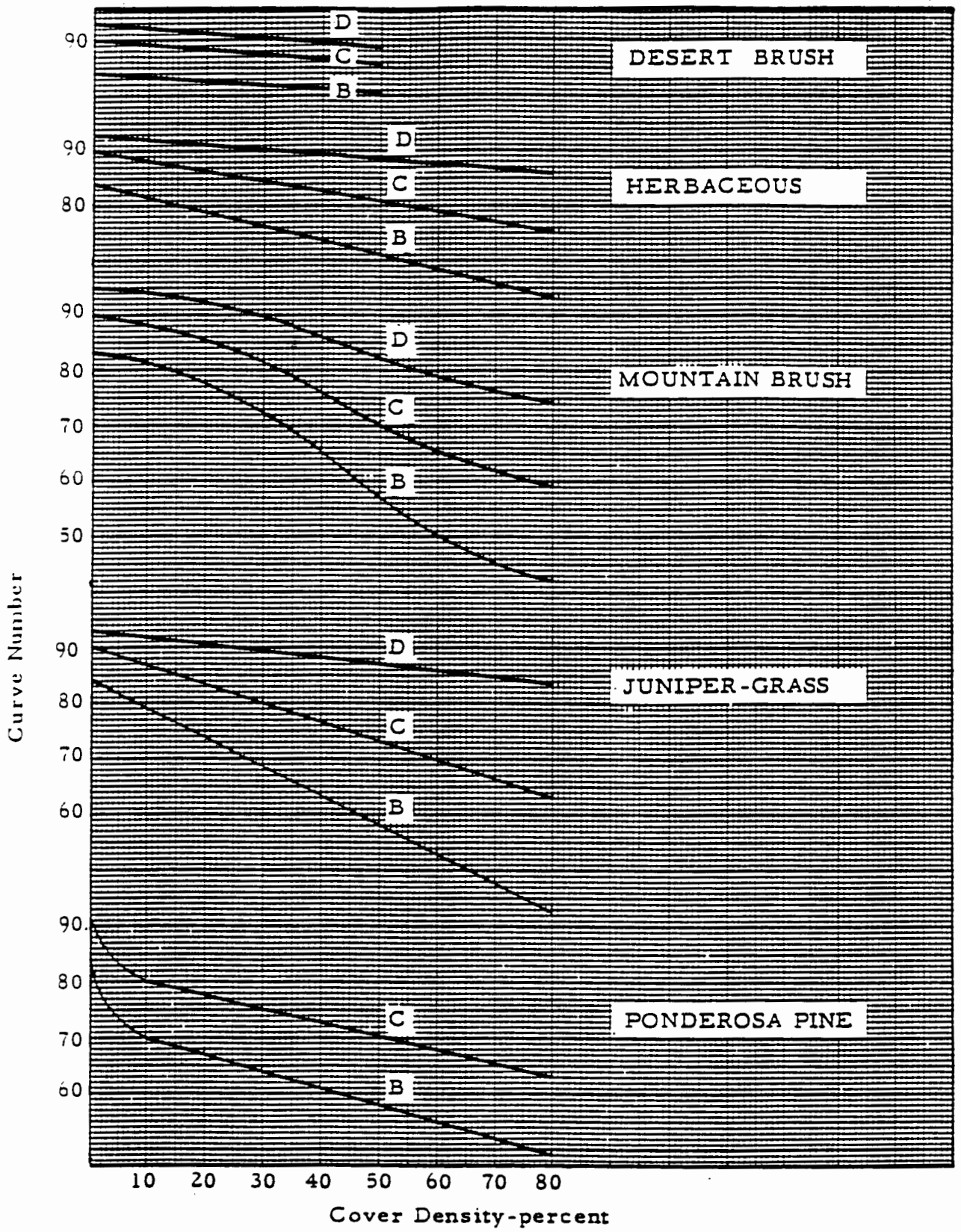
FIGURE C-5



KERN COUNTY
HYDROLOGY MANUAL

DESIGN STORM
LOSS FUNCTION

FIGURE C-6



KERN COUNTY

HYDROLOGY MANUAL

HYDROLOGIC SOIL COVER COMPLEXES AND ASSOCIATED CURVE NUMBERS

FIGURE C-7

Section C
Equations

List of Equations

Equation No.	Equation
C.1	$Ia = 0.2S$
C.2	$S = \frac{1000}{CN} - 10$
C.3	$Y_j = \frac{(P_{24} - Ia)^2}{(P_{24} - Ia + S)P_{24}}$
C.4	$Y = \frac{Y_1 A_1 + ... + Y_m A_m}{A_1 + A_2 + ... + A_m}$
C.5	$\overline{Y} = 1 - Y$
C.6	$F* = \overline{Y} \cdot I$
C.7	$Fm = a_p F_p$

Variables

Ia	Initial Abstraction (inches)
S	Estimate soil capacity
CN	Area Curve Number
Y_j	Yield fraction for 24-hour storm runoff
Y	Yield
$\overline{Y}$	Catchment low loss fraction

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Appendix F

Kern County Development Standards: Standards for Drainage

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DIVISION FOUR

STANDARDS FOR DRAINAGE

CHAPTER I. GENERAL

Sec. 401-1 General Purpose

401-1.01 It is the general purpose of these standards that waters generated by storms, springs, or other sources be mitigated so as to provide reasonable levels of protection for life and property, and the maintenance of necessary access to property or passage of the traveling public on the public highways.

401-1.02 To meet this general purpose, it is necessary that these standards reasonably protect life from the direct effects of flood waters, the indirect health effects associated with stagnating water, and the attractive nuisance provided by standing waters. It is necessary to reasonably protect property from the damaging effects of flood waters. Property access for the ingress and egress of emergency vehicles, or the general public should be reasonably provided. The passage of public vehicles on the public highways should also be reasonably ensured.

401-1.03 In general, the mitigation measures for the protection of life and property, and the maintenance of emergency vehicle access are based upon the Capital Storm Design Discharge (CSDD). The issues related to property access (by the public) and passage on public highways, and local drainage facility design are based upon the Intermediate Storm Design Discharge (ISDD).

401-1.04 The design standards in this section are to be deemed to be minimal, and shall not limit the design engineer from using higher standards based upon the engineer's assessment of the protection needs of the development. Alternatives are permissible which are determined by the Director to be of equal or higher quality.

401-1.05 The Director may allow such exceptions as he may find to be reasonably required by the specific circumstances, to be in the public interest and in conformity with the general objectives of these standards.

401-1.06 Special circumstances may exist that require additional mitigation above and beyond these standards as determined by the Director.

Sec. 401-2 Maintenance

401-2.01 All facilities intended for public maintenance shall be designed and constructed subject to the approval of the Director and the maintenance entity, or these standards, whichever is more conservative.

401-2.02 All drainage facilities intended for private maintenance shall provide a maintenance plan, subject to the approval of the Director. All such facility maintenance plans shall include, but not be limited to: (a) schedule of cleaning (or clearing), (b) mosquito and vector abatement measures (if applicable), (c) pump maintenance schedule (if applicable), (d) notarized statement by the owner(s) acknowledging his/her/their responsibility and intent to maintain the proposed facility in accordance with the approved maintenance schedule.

401-2.03 Subdivisions with privately maintained streets shall have the drainage facilities maintained by a homeowners association or other entity which has the ability to assess fees for maintenance.

CHAPTER II. DEFINITIONS

Sec. 402-1 Definitions:

402-1.01 **AGENCY**: refers to the Department of the County of Kern with jurisdiction.

402.1.02 **ALLUVIAL FAN**: is a landform originating at an apex and characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

402-1.03 **APEX**: means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

402-1.04 **CAPITAL STORM DESIGN DISCHARGE (CSDD)**: is that flow determined based upon a precipitation event having a one percent probability of being equaled or exceeded in any given year, commonly referred to as the 100 year storm.

402-1.05 **CLOSED CONDUIT**: is any system of underground drainage facilities, other than culverts.

402-1.06 **COMPREHENSIVE DRAINAGE PLAN**: refers to a storm water runoff mitigation plan for multi-phase developments. Such a plan need not be adopted by the County, but will be kept on file by the Director.

402-1.07 **CONSTRUCTED CHANNEL**: refers to the physical modification of natural channels or the construction of channels.

402-1.08 **CONTROL FACILITY**: are those hydraulic structures which mitigate the effects of surface runoff resulting from development, flow pattern modification, or flood flows.

402-1.09 **CULVERT**: is a hydraulically short conduit which conveys storm runoff flows through a roadway embankment or past some other type of flow obstruction.

402-1.10 **DESIGN PONDING DEPTH**: is the depth to which the design volume will pond in a storm water basin.

402-1.11 **DETENTION BASIN**: is a storm water facility designed to affect flood hydrograph peak attenuation.

402-1.12 **EMBANKMENT AREA**: is an area of compacted fill material.

402-1.13 **ENCROACHMENT:** refers to any change in land use that materially alters the lands flow conveyance potential.

402-1.14 **FLOOD CONTROL PLAN**: is a plan for the mitigation of flood flows originating from off-site watersheds, or resulting from on-site development.

402-1.15 **FLOOD FLOW**: shall be considered to be the CSDD for reference in these standards.

402-1.16 **FLOW PATTERN**: refers to any physical tracing resultant from the historic or existing runoff of water.

402-1.17 **INTERMEDIATE STORM DESIGN DISCHARGE (ISDD**): is that flow determined based upon a precipitation event having a ten percent probability of being equaled or exceeded in any given year, commonly referred to as the ten-year storm.

402-1.18 **LEVEE**: is an embankment whose primary purpose is to furnish drainage or flood protection from storm water runoff and which is, therefore, subject to water loading for periods of only a few days or weeks a year.

402-1.19 **MASTER DRAINAGE PLAN**: refers to a comprehensive drainage plan or flood control plan adopted by the County which includes adopted funding mechanisms.

402-1.20 **NATURAL CHANNEL**: is a flow pattern characterized by incised flow channelization with well defined banks and including the overbank flow areas.

402-1.21 **NUISANCE FLOW**: shall be considered as those waters originating from within, or adjacent to, the development not resulting from storm runoff.

402-1.22 **ONE PERCENT RISK FLOW**: is the flow on an alluvial fan based upon the joint probability of the flow distribution at the fan apex and the probability of occurring at the development site.

402-1.23 **REASONABLE:** in the context of this section refers to the balancing of the utility of the facilities or circumstances described against the gravity of the potential for harm.

402-1.24 **RETENTION BASIN**: is a terminal storm water facility for the storage of runoff. Commonly referred to as a sump.

402-1.25 **RETARDATION BASIN**: Synonymous with Detention Basin.

402-1.26 **SLOPE EASEMENT**: shall include the horizontal dimension from the top to toe of slope plus the setback requirements specified by the Grading Ordinance.

402-1.27 **SOILS ENGINEER (GEOTECHNICAL ENGINEER):** shall mean an engineer experienced and knowledgeable in the practice of soils engineering (geotechnical engineering).

402-1.28 **SOILS ENGINEERING (GEOTECHNICAL ENGINEERING):** shall mean the application of the principles of soil mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection and/or testing of the construction thereof.

402-1.29 **STRESS AREA**: refers to those locations where the erosion potential is greater than a straight, uniform channel reach, and includes junctions, transitions, and curves.

402-1-30 **WATERWAY**: refers to any natural channel, artificial channel or closed conduit, which provides a course for drainage water to flow.

Sec. 402-2 Off-Site Capital Storm Design Discharge (CSDD) Mitigation

The CSDD flow determined from the off-site watershed shall consider the total area of the off-site watershed. The watershed development condition may be considered in its existing condition at the time of the proposed development if no control facilities mitigating surface runoff exist, and as undeveloped if adequate control facilities mitigating surface runoff exist.

The design of all structures within the development shall be protected to a minimum of one (1) foot above the water surface associated with the CSDD.

The CSDD flow shall be received into the development without diversion onto adjacent property or causing more than one foot rise in pre-development water surface, and shall be discharged in a manner as similar as possible to the existing condition downstream of the development.

Sec. 402-3 Off-Site Intermediate Storm Design Discharge (ISDD) Mitigation

The ISDD flow shall be based upon the uncontrolled developed watershed proximate to the development when no defined flow pattern exists. When a flow pattern is defined, the ISDD flow determination shall include the total watershed contributing to the flow pattern.

The off-site ISDD shall be mitigated in conjunction with requirements for on-site ISDD flows.

Sec. 402-4 Hydrologic Flow Determinations

The CSDD and ISDD flows shall be calculated in accordance with the current Kern County Hydrology Manual.

CHAPTER III. DRAINAGE PLANS

Sec. 403-1 Authority

403-1.01 County Master Drainage Plans

The County administers master drainage plans (MDP) over some portions of the County. In these MDP areas, the design hydrology is governed by the assumption made and methodology used, in the development of the MDP or its most recent revision. Modifications to the MDP's assumed land uses may result in the requirement of additional permanent facilities being constructed to mitigate unanticipated runoff.

If MDP planned facilities have not been constructed at the time of site development, then temporary facilities will be required to be

constructed by the Developer. Such facilities may be abandoned upon completion of the MDP facilities intended to serve the site.

403-1.02 Special Districts

Special Districts, such as Community Service Districts, may prepare comprehensive drainage and/or flood control plans for areas under their jurisdiction. Such plans are subject to the review and approval of the County.

If the Special Districts planned facilities have not been constructed at the time of site development, then temporary facilities will be required to be constructed. Such facilities may be abandoned upon completion of the planned facilities intended to serve the site.

County Service Areas are typically required to be formed for the maintenance of drainage facilities in the absence of another maintenance entity.

403-1.03 Subdivisions

These standards shall apply to the drainage/floodplain management requirements specified for subdivisions improvements in the County's Land Division Ordinance.

If the subdivisions storm runoff mitigation measures are to be constructed as part of a comprehensive drainage plan, then each phase of the development shall be designed to function independently or in conjunction with completed development phases.

403-1.04 Mobile Home/Recreational Vehicle Parks

These standards shall apply to the drainage/floodplain management review of Mobile Home/Recreational Vehicle Parks specified in the County's Zoning Ordinance.

403-1.05 Site Development

These standards shall apply to the drainage/floodplain management requirements specified for site development in the County's Building Code, Grading Code, Floodplain Management Ordinance, and all other pertinent County Ordinances.

CHAPTER IV. ALLUVIAL FAN DEVELOPMENT

Sec. 404-1 Development Policy

Development upon an alluvial fan shall mitigate the effects of the flow at the site of development, which has a one-percent risk of being equaled or exceeded in any given year. Such mitigation shall ensure that the one-percent risk flow will be received into the development site, without causing more than one foot of water surface rise resulting from encroachment at the development site, and discharge the one percent risk flow in a manner, as close as possible, to the flow pattern existing prior to development of the site.

Sec. 404-2 Flood Control Facility Requirements

The design of structural flood control measures on alluvial fans shall demonstrate that the measures will effectively eliminate alluvial fan flood hazards from the area protected by such measures. The provided analyses must include, but are not limited to, the following:

404-2.01 Engineering analyses that quantify the discharges and volumes of water, debris, and sediment movement associated with the flood that has a one percent probability of being exceeded in any year at the apex under current watershed conditions and under potential adverse conditions (e.g., deforestation of the watershed by fire). The potential for debris flow and sediment movement must be assessed using an engineering method acceptable to the Director and Federal Emergency Management Agency (FEMA). The assessment should consider the characteristics and availability of sediment in the drainage basin above the apex and on the alluvial fan.

404-2.02 Engineering analyses showing that the measures will accommodate the estimated peak discharges and volumes of water, debris, and sediment, as determined in accordance with Section 404-2.01, and will withstand the associated hydrodynamic and hydrostatic forces.

404-2.03 Engineering analyses showing that the measures have been designed to withstand the potential erosion and scour associated with estimated discharges.

404-2.04 Engineering analyses or evidence showing that the measures will provide protection from hazards associated with the possible relocation of flow paths from other parts of the fan.

404-2.05 Engineering analyses that assess the effect of the project on flood hazards, including depth and velocity of floodwaters and scour and sediment deposition, on other areas of the fan.

404-2.06 Engineering analyses demonstrating that flooding from sources other than the fan apex, including local runoff, is either insignificant or has been accounted for in the design.

CHAPTER V. STREET DRAINAGE

Sec. 405-1 Design Flow

405-1.01 The ISDD shall include the evaluation of both on-site and off-site watersheds when applicable.

405-1.02 Street Conveyance

1. For Type "A" subdivisions, the ISDD may exceed the top of a six (6) inch curb by 0.10 feet.

2. For Type "B" subdivisions, the depth of flow contained within the road right of way shall not exceed 0.60 feet for the ISDD.

3. The depth of flow for the CSDD on major and secondary highways shall be maintained as not to prohibit reasonable access.

4. For mobile home/recreational vehicle parks, the depth of flow for the ISDD shall not exceed the carrying capacity of the travel way.

5. Where the discharge exceeds the above mentioned limits, a stormdrain or other facilities shall be provided to convey the excess flows.

6. The drainage system shall be free flowing and shall not allow the retention of more than one (1) foot of water measured at the flowline after the flows have subsided.

405-1.03 Sedimentation

In areas suspected of significant sediment yield from an ISDD, the following shall apply:

1. The developer’s engineer shall quantify any sediment yield from on-site or off-site properties based upon the ISDD.

2. Sediment yield shall be independent of the runoff event and is to be mitigated separate from the design discharge.

3. Sediment shall not be deposited on the roadway.

4. Higher levels of mitigation may be required in mudslide-mudflow areas.

405-1.04 Erosion

1. Erosion protection measures based on the ISDD shall be established upstream, downstream and through the project by the developer's engineer subject to approval by the Director.

CHAPTER VI. CULVERTS, BRIDGES AND AT-GRADE-CROSSINGS

Sec. 406-1 General

406-1.01 All publicly maintained crossings of natural channels shall be bridged or culverted. The minimum length of any culvert shall be from toe-of-slope to toe-of-slope. Additional right-of-way may be required for maintenance of these facilities.

406-1.02 Roadways shall be required to bridge a floodway where encroachment of the floodway is prohibited.

406-1.03 Energy losses for bridge piers, interior walls for multiple box culverts, or other obstructions within the channel shall be predicated upon the obstruction width plus two (2) feet of debris allowance for each obstruction.

Sec. 406-2 Culverts

406-2.01 The ISDD for the total upstream watershed under existing conditions shall not exceed soffit of culvert.

406-2.02 The CSDD for the total upstream watershed under existing conditions will be allowed to overtop the roadway until 2.0 feet of specific energy is obtained, at which point additional culverts will be required to meet these minimum requirements.

406-2.03 The 2.0 feet of specific energy shall be calculated at the crown or high point of the traveled roadway.

406-2.04 The minimum size of any culvert under a publicly maintained roadway shall be 18 inches. For private roads or public access, which are privately maintained, this requirement may be waived.

406-2.05 Culverts shall be designed to have a minimum useful life of 50 years.

Sec. 406-3 Bridges

406-3.01 The lowest portion of the bridge span shall be one foot or 0.2 times the specific energy (whichever is greater) above the water surface elevation when the normal depth of flow for the CSDD is subcritical.

406-3.02 The lowest portion of the bridge span shall be one foot or 0.2 times the specific energy (whichever is greater) above the sequent flow depth when the normal depth of flow for the CSDD is supercritical.

406-3.03 When levee conditions exist, the lowest portion of the bridge span shall also meet the minimum freeboard requirements of the levee.

Sec. 406-4 At-Grade-Crossings

406-4.01 At-grade-crossings shall not be permitted on a publicly maintained roadway and shall not encroach upon a floodway.

CHAPTER VII. CLOSED CONDUIT SYSTEMS, CATCH BASINS

Sec. 407-1 Design

407-1.01 Closed conduit system shall be designed for the total ISDD flow less allowable street flow. (see Chapter V Street Drainage)

407-1.02 A closed conduit system intended to serve on-site lot development shall be designed for the total ISDD originating on-site.

407-1.03 Closed conduit system shall be designed to have a minimum useful life of 50 years.

407-1.04 The minimum size of a closed conduit system within the street right-of-way or intended for public maintenance shall be 18 inches.

407-1.05 The minimum size of a closed conduit system outside of the street right-of-way and intended to be privately maintained shall be eight (8) inches.

407-1.06 The minimum cover over any closed conduit system shall be 24 inches. The minimum cover required within the street right-of-way shall be 30 inches.

407-1.07 Closed conduit system shall be free flowing with no continuous standing water within the pipe.

407-1.08 The designed pipe size shall not be allowed to decrease as the system progresses downstream.

407-1.09 The minimum slope of any closed conduit system shall be .001(.10 percent) unless otherwise approved by the Director.

407-1.10 The hydrologic tie-in design criteria for the closed conduit system shall be based on equal recurrence.

407-1.11 Closed conduit system within the street right-of-way or intended for public maintenance shall be Class III reinforced concrete pipe with rubber gasket joints, or cast-in-place concrete pipe unless otherwise approved or required by the Director.

407-1.12 The developer's engineer shall plot the hydraulic grade line and the energy grade line profiles for the closed conduit system either on a set of, or on the original, street improvement plans. All calculations and related data for these profiles shall be included with the street improvement plans when submitted.

Sec. 407-2 Location

407-2.01 A publicly maintained closed conduit system shall be placed within the road right-of-way or easement unless otherwise approved by the Director.

407-2.02 The alignment of a publicly maintained closed conduit system shall be parallel or perpendicular with the centerline of the road unless otherwise approved by the Director.

Sec. 407-3 Freeboard

Within the closed conduit system, the hydraulic grade line shall be at least 0.5 feet below all inlet flowline elevations, and 0.5 feet below the top of non-pressure manholes.

Sec. 407-4 Manholes

407-4.01 Within the closed conduit system, manholes shall be provided at all junctions, bends, and at intervals prescribed below:

a. Manholes shall be provided at intervals no greater than 300 feet where the conduit diameter is less than or equal to 30 inches.

b. Manholes shall be provided at intervals no greater than 400 feet where the conduit diameter is larger than 30 inches, but smaller than 48 inches.

c. Manholes shall be provided at intervals no greater than 500 feet where the conduit diameter is 48 inches or larger.

407-4.02 A pressure manhole shaft and a pressure cover shall be installed in a closed conduit system whenever the energy grade line is less than 0.50 below the top of the manhole.

Sec. 407-5 Losses

In addition to normal friction losses, energy losses due to entrance and exit conditions, bends, junctions, and transitions shall be computed. The engineer shall supply all data and reference material for calculated losses subject to review and approval by the Director.

Sec. 407-6 Erosion

407-6.01 Velocities within the closed conduit system should not exceed 20 feet per second with standard wall RCP, or 10 feet per second for plastic pipe. Where velocities exceed 20 feet per second for RCP, or 10 feet per second for plastic pipe, a special pipe shall be installed as approved by the Director.

407-6.02 Erosion protection against scour velocities shall be provided at the inlet and outlet of the closed conduit system. The engineer shall supply all data and reference material supporting his/her design, subject to approval by the Director.

Sec. 407-7 Catch Basins

407-7.01 The inlet design at closed conduit systems (i.e., location, depression, capacity, structural, etc.) shall be subject to review and approval by the Director.

407-7.02 Grate type inlets to the closed conduit system within the street right-of-way shall be allowed only in conjunction with side curb openings and shall be bicycle safe.

407-7.03 The minimum width of opening for any catch basin intended to be publicly maintained shall be three (3) feet and six (6) inches (3.5').

Sec. 407-8 Rights-of-Way/Easements

407-8.01 A right-of-way sufficient to contain the closed conduit and appurtenances plus a minimum of five feet on each side, measured from the edge of the conduit or drainage structure, shall be provided but in no case shall the right-of-way be less than 15-feet in width. Whenever possible, rights-of-way for conduits shall be adjacent to property lines and outside areas where structures are planned. Under no circumstances shall closed conduits and appurtenances be constructed less than 10-feet from any planned or existing structure.

407-8.02 Easements will be required on all closed conduit systems outside of the street right-of-way, which are intended for public maintenance.

407-8.3 Land rights shall be conveyed to the County in one of the following forms, whichever is appropriate:

1. Separate parcel easement dedicated on a subdivision map.
2. Easement dedicated on a subdivision map as part of adjacent lots.
3. Fee simple or easement offered or granted by separate documents.

CHAPTER VIII. RETENTION BASIN DESIGN

Sec. 408-1 Design Volume

The design volume of storm water retention basins shall be based upon the runoff from the ISDD five-day storm event and a volume of nuisance water determined by the engineer. No runoff generated on site from the design storm or from nuisance flows will be allowed to leave the site unless downstream drainage disposal facilities exist to handle the flow. The retention of upstream off-site flows shall not be considered to reduce the size of the required on-site retention facilities or mitigate the runoff from the proposed development. An evaluation of the runoff volumes associated with the site in its existing condition shall not reduce the size of the required drainage facilities. The runoff volume from the ISDD five-day storm shall be calculated using the formula:

$$\text{Runoff Volume} = 0.12\ (D_{10})(a_i)(\text{Area})$$

D_{10}	=	10 yr 24-hr. depth of rainfall (in.)
a_i	=	average percentage of impervious area
Area	=	Drainage area of total development
0.12	=	1.44 x 1/12
1.44	=	5 day mass ratio (KC Hydrology Manual, Table B-1)
1/12	=	Conversion of rainfall depth in inches to feet

Sec. 408-2 Hydraulic Design

In the absence of a hydrologic volume routing analysis, the storm drain hydraulic grade line calculations shall assume that 50% of the design storm volume and 100% of the nuisance volume is in the basin when the peak flow rates occur.

Sec. 408-3 Freeboard

Freeboard shall be required for all retention basins having a design water depth exceeding 18 inches. Six (6) inches of freeboard will be required when the design ponding depth within the basin is four (4) feet or less. For basins with a design ponding depth greater than four (4) feet the amount of freeboard required shall be one (1) foot. Freeboard shall be measured from the lowest gutter inlet or top of bank, whichever is lower.

Sec. 408-4 Fencing

Retention basins shall be fenced and provided with gated access when the design ponding depth exceeds 18 inches. All retention basins, regardless of ponding depth, that are maintained by the County or an entity administered by the County shall be enclosed by a six (6) foot high masonry block wall. Exceptions may be made, subject to the Director's approval, for certain master planned facilities intended for multi-purpose use.

408-4.01 The fence shall consist of a six (6) foot high chain link fence of 9 gage fabric with redwood slats or a six (6) foot masonry block wall or approved equal. Fence post footings shall have a minimum diameter of 12 inches and a minimum depth of 30 inches. Masonry block walls shall be designed in accordance with accepted engineering practices. Retaining walls used for basin fencing requirements shall have their design approved by the Director. See Plates R-77 thru R-82.

408-4.02 Fence setbacks measured from the top of slope shall provide a reasonable maintenance way for the equipment outlined in the maintenance plan. The following minimum setbacks shall apply:

Design ponding depth	Setback
$\leq$ 18 inches	2 feet
> 18 inches but $\leq$ 4 feet	5 feet
> 4 feet	10 feet
> 8 feet	10 feet (or in accordance with an approved maint-enance plan).

408-4.03 The basin access gate may be chain-link, wrought iron, or other as approved by the Director. The double gate is not to be attached directly to the masonry wall. The opening must be sufficient for the 14-foot double gate and anchor posts. If wrought iron is used, a metal

mesh privacy screen is to be securely attached to the double gate by rivets or equivalent as approved by the Director. Wrought iron double gates will also require a commercial grade latch or equivalent that can be locked with a County padlock (3/8" shackle diameter). See Plates D-11 for specific sizing and material requirements.

Sec. 408-5 Access

An equipment access ramp to the bottom of the retention basin shall be provided when the design depth exceeds 18 inches or when the facility is intended for County maintenance.

408-5.01 The ramp shall be a minimum of 12 feet wide with a maximum slope of 15%. The gate to the access ramp shall be 14 feet wide.

Exception - When the design ponding depth is $\leq$ 4 feet, the maximum slope on the ramp may be increased to 20%.

408-5.02 Ramps shall not be designed to convey drainage water into the sump.

408-5.03 The ramp alignment shall be no more than 45 degrees from the center of the access gate to facilitate maintenance equipment ingress and egress. Other proposed alignments shall have their design approved by the Director.

Sec. 408-6 Curbing and Rodent Barriers

408-6.01 In conjunction with fencing, a six (6) inch wide, eighteen (18) inch deep continuous concrete curb shall be provided around the top of the sump. The top of the curb shall be 0.5 feet above the highest adjacent grade. When the sump is fronting on a street, the top of the curbing shall be a minimum of one (1) foot above the top of the street curb. Ramped access across the curb shall be provided at all gated access points to the sump.

408-6.02 Rodent barriers will be required on the sides of the sump in proximity to open space, agricultural areas or lot one (1) acre or larger. The bottom of the rodent barrier shall be a minimum of 42 inches below finish grade.

Exception - Rodent barriers may be omitted when the design water depth is 4 feet or less.

Sec. 408-7 General Construction Requirements

408-7.01 General construction requirements for retention facilities shall be in accordance with Plates D-1, D-2, and D-3.

408-7.02 Retention facilities shall have the design volume contained entirely in cut.

408-7.03 Slopes shall be designed no steeper than is safe and no steeper than two (2) horizontal to one (1) vertical. A slope stability analysis will be required when the design water depth exceeds eight (8) feet and side slopes are steeper than 3:1.

408-7.04 The minimum bottom dimension for retention basins with a design depth greater than four (4) feet shall be 20 feet. For design water depths 4 feet or less, the minimum bottom width shall be no less than that required for maintenance equipment specified in the maintenance plan.

408-7.05 The maintenance way shall be sloped away from the top of bank at a minimum 2%.

408-7.06 Drainage basins intended for County maintenance shall be located on a lot dedicated exclusively for drainage/recreational purposes.

Sec. 408-8 Testing

408-8.01 Retention basins shall not be permitted unless it can be demonstrated, to the satisfaction of the Director, that the basin will completely drain the design volume within seven (7) days.

408-8.02 Testing of the proposed retention basin shall be provided by a Soils Engineer and shall include, but need not be limited to, an analysis of the soils boring logs and the establishment of the drainage rates of the soils encountered. A minimum of one (1) boring shall be logged within the proposed sump location. This boring shall be advanced below the invert of the basin to a depth equivalent to at least three (3) times the design ponding depth. Testing methods used to establish soil drainage rates shall be approved by the Director.

CHAPTER IX. DETENTION BASIN DESIGN

Sec. 409-1 Design Flow

The design flow into the basin shall be the ISDD five-day runoff hydrograph. Hydrograph design and mass ratios shall be in accordance with the Kern County Hydrology Manual. The out flow hydrograph shall not extend beyond five days from the end of the inflow hydrograph. Infiltration effects from the detention facility shall not be included in the calculation of the outflow hydrograph.

Sec. 409-2 Facility Design

Sizing and placement of detention facilities shall not aggravate the potential for downstream flooding.

Requirements for fencing, curbing, setbacks, access, and freeboard shall be in accordance with retention basin design.

409-2.01 Detention basins shall be provided with a concreted low flow bypass, or approved equivalent, for the conveyance of nuisance flows to the outlet.

409-2.02 An emergency spillway will be incorporated in the design of all detention basins.

Sec. 409-3 Sedimentation

Sediment yield shall be determined and mitigation provided by the developer's engineer.

Sec. 409-4 Duplex Pump Station (Wet Well) Design Specifications

Pumps used in conjunction with detention facilities shall have their design approved by the Director. Specific design criteria shall include the use of an automated duplex pump, and an alarm system. The pump system shall be designed to pass a minimum two (2) inch sphere and for reliability and low maintenance. Pump maintenance shall be included in the facility maintenance plan.

409-4.01 Pump station shall be designed to drain the sump in 5 to 7 days with one (1) pump running. However, the minimum flow rate shall be 100 gpm.

409-4.02 Pump station shall be a duplex system which automatically alternates between pumps at the end of each cycle.

409-4.03 The pump station shall either include a lag pump design or automatic controls, which will start the second pump if the first fails to pump.

409-4.04 Pumps shall be minimum one (1) HP.

409-4.05 Pump station shall be designed to allow easy removal of pumps for maintenance, without requiring personnel to enter into a wet well or similar enclosed structure. A "cage" style pump system, where the pump is located in a cage structure at the bottom of the basin, will not be allowed.

409-4.06 Pumps and pump station inlet structure shall be screened to prohibit plugging by debris.

409-4.07 The pump station (including the electrical/control panel) shall be located next to the entrance of the basin.

409-4.08 The receiver wet well shall consist of one 60” diameter concrete precast manhole sections with single offset R-3 rubber gasket joints per ASTM C-478, latest edition or approved equal. Duplex pump system shall be equipped with two 1HP (minimum), 115V, non-clog, explosion proof, sump pumps with alarm and alarm switch, check valves, ball valves, discharge line, pump lift out assembly, and electrical junction box. Include a 30” x 42” hatch with lockable, steel hinged access with safety grate.

409-4.09 The lifting assembly shall be best suited for the pump arrangement. All cables, etc. are to be stainless steel nylon coated. All slide metal surfaces must be considered non-sparking, by URL, to prevent spark ignition in wet well.

409-4.10 The valve vault shall consist of one 42” diameter concrete precast manhole section (conforming to ASTM C-478 with single offset R-3 gasket joints) with gate valves, swing check valves, and adjustable pipe supports or equivalent. Include a 24” x 24” hatch with lockable, hinged steel access door with safety grate.

409-4.11 Sump pump wiring shall be connected to a waterproof electrical control panel in a NEMA 3 enclosure or equivalent.

409-4.12 A four inch (4”) thick Class 2 concrete pad will be required to encompass the precast top slabs, manholes and control panel.

409-4.13 All electrical conduits and connectors shall be sealed water-tight and gas-tight using bitumastic paint.

409-4.14 All pipe or conduit wall penetrations shall be sealed with a neoprene seal.

409-4.15 All exposed steel (pipe, valves, flanges, elbows, and control box exterior) shall be primed with zinc-chromate primer and painted with an epoxy enamel finish. Color to be grey unless otherwise approved.

409-4.16 A water level staff shall be placed in the sump. The staff may be either anchored to the sideslope of the sump or be attached to the outlet structure, as approved by the Director. The bottom portion of the staff shall be painted black and white, alternating at one-foot increments, to an elevation equivalent to the half full-depth of the sump. The top portion of the staff shall be painted red and white, alternating at one-foot increments, to one foot above design water surface.

409-4.17 All controls shall be mounted in a NEMA (3) metal enclosure or equivalent. The control panel and all electrical components shall bear the Underwriter's Laboratory (UL) Label. All circuit breakers shall have operators extending through the control panel door. All motor starter overload resets, selector switches, push buttons and pilot lights shall be mounted on the control panel door. The control panel shall be enclosed in a vandal resistant enclosure with provisions for locking with a County's lock 3/8" shank pad lock or approved equal.

409-4.18 The control for each pump shall include a thermal magnetic circuit breaker, rotary hand-off-automatic switch, and magnetic motor starter with ambient compensated overload relays and quicktrip heaters. The pump control circuit shall include a door interlock switch to de-energize the control circuit when the control panel door is open, a control mounted transformer with fused 115 volt secondary, and a door mounted control circuit disconnect switch.

409-4.19 Pump operation shall be controlled by three (3) bulb type liquid level sensors. An intrinsically safe pilot circuit shall be provided for each level sensor to reduce the power to the sensor to a level incapable of releasing sufficient electrical or thermal energy to ignite explosive gases.

409-4.20 A fourth level sensor, with intrinsically safe circuit, shall be furnished for indication of high water alarm condition. High water alarm shall be indicated by a panel-mounted pilot light and external audible alarm with silence button.

409-4.21 The controls shall provide for lead/lag sequencing of the pumps, an automatic alternator shall alternate the lead/lag duty on each succeeding pump cycle. An outer pump seal leakage detection system shall be included in the control enclosure. When the motor probes sense the presence of moisture in the oil seal chamber, a

relay coil will illuminate a panel mounted indicating alarm lamp to indicate possible outer motor seal failure and the alarm light.

409-4.22 The pump station shall have a Hand-Off-Auto switch and an automatic low water shut-off, and have green (run) and red (alarm) indicator lights visible from the road/street.

409-4.23 Control panel shall contain hour meters for each pump.

409-4.24 Control panel shall contain a switched GFI 115 volt duplex electrical outlet.

409-4.25 Control panel shall include an emergency generator hook-up connection.

409-4.26 System Testing—Installed pumps, controls and pipes shall be tested in accordance with recommendations of the manufacturer prior to acceptance by the Kern County Engineering, Surveying & permit Services Department.

409-4.27 Prior to acceptance, two (2) complete operation and maintenance manuals, with wiring and interconnect diagrams for all equipment and controls, model and serial numbers of the sump pumps, and a set of as-built drawings on cronar shall be furnished to the County.

CHAPTER X. CONSTRUCTED CHANNEL DESIGN CRITERIA

Sec. 410-1 Design Flow

Constructed channels shall be designed to carry the CSDD plus freeboard.

Sec. 410-2 Freeboard

410-2.01 The minimum freeboard between the design water surface, and the top of bank of the channel shall be 0.50 feet or 0.20 of the specific energy, whichever is greater.

410-2.02 If the designed water surface is within the embankment area, the design and construction of the channel shall be in accordance with the levee design criteria, including freeboard requirements.

410-2.03 The minimum freeboard requirements for bridges, culverts, and utility crossings which span open channels and which are existing, planned

or projected at the time of channel design shall be in accordance with the requirements specified in Sections 406-2 and 406-3.

410-2.04 Superelevation resultant from directional modification shall be considered prior to computing the required freeboard.

Sec. 410-3 Hydraulic Design

410-3.01 Channels shall be designed with proper allowance for hydraulic losses for all planned and projected future crossings or other obstructions to maintain clearance and freeboard as required.

410-3.02 The water surface and the energy grade line profile shall be computed and plotted for all constructed channels and at locations where natural channels modifications are proposed.

410-3.03 Constructed channels shall not be designed with a slope in the range of ± 20% of critical slope unless freeboard equal to the height for instability waves is added.

410-3.04 A minimum velocity of two (2) feet per second shall be maintained for lined channels to prevent sedimentation.

Sec. 410-4 Structural Design

410-4.01 The minimum bottom width of constructed channels shall be ten (10) feet. A triangular channel may be permitted when the channel side slopes are four (4) to one (1) or flatter.

410-4.02 The minimum centerline radii for curves in constructed channels shall be three (3) times the top width of the design water surface.

410-4.03 Design of slopes shall be predicated upon results of an investigation by a Soil Engineer, subject to the approval of the Director.

410-4.04 Adequate bank protection and drop structures shall be provided where the slopes in the channel are steep and high velocities are present.

410-4.05 Bank protection shall be provided based on the design engineer's recommendations, subject to the approval of the Director. Stress area protection shall extend downstream from the end of the stress area a distance equal to ten (10) times the design water depth, unless the engineer can show that the erosion potential is not excessive.

410-4.06 At drop structures or in other locations where a hydraulic jump may occur, bank protection shall be provided through the hydraulic jump for a minimum distance of six (6) times the sum of the sequent depth and the depth of freeboard. This protection shall cover the invert and extend to the height of the sequent depth plus the height of the freeboard. The protection material may be either concrete, concreted-rock slope protection, sacked concrete, air-blown mortar or other approved alternative.

410-4.07 All channel lining materials and methods shall be specified by the engineer and approved by the Director.

410-4.08 All appurtenant drainage facilities shall be constructed and areas adjacent to channels graded so that erosion will be prevented within the channel right-of-way.

410-4.09 Waterways shall enter the main channel at an angle not exceeding 25 degrees.

Sec. 410-5 Erosion

The engineer shall provide recommendations on all necessary mitigation measures for erosion including bank protection and bottom stabilization of the channel, subject to the approval of the Director.

Sec. 410-6 Fencing

410-6.01 Constructed channels with slopes steeper than four (4) to one (1) with specific energy, at any point, greater than 1.5 feet shall be fenced in its entirety.

410-6.02 A six (6) foot high nine (9) gage chain link fence fabric with tension wire shall be installed on each side of the right-of-way.

410-6.03 At all road intersections, fencing shall be installed to prevent public access to constructed channels.

410-6.04 A 14 foot wide chain link drive gate shall be provided at all points of vehicular access.

Sec. 410-7 Easements/Right-of Ways and Maintenance Ways

410-7.01 Right-of-ways for constructed channels with side slopes steeper than four (4) to one (1) shall be provided as follows:

a. The right-of-way for channels with top widths greater than 50 feet, as measured to the top of freeboard, shall include the top width of the channel, two maintenance ways (one on each side of the channel), slope easements (when applicable), and interceptor ditch area (when applicable). The maintenance ways shall be a minimum of 15 feet wide. Runoff from the maintenance ways shall be mitigated.

b. The right-of-way for channels with top widths of 50 feet or less, as measured to the top of freeboard, shall include the top width of the channel, one maintenance way on either side of the channel, slope easements (when applicable), and interceptor ditch area (when applicable). The maintenance way shall be a minimum of 15 feet wide. Runoff from the maintenance way shall be mitigated.

410-7.02 The right-of-way for constructed channels with side slopes four (4) to one (1) or flatter shall be sufficient to contain the top width of the channel (measured from top of freeboard) plus slope easements as needed. A minimum of five (5) feet on either side of the channel shall be provided for maintenance purposes.

410-7.03 Right-of-way for turn-around: Turn-around distance and radii:

At the terminus and at intervals not to exceed one channel mile, turn around areas shall be provided. The minimum inside radii for maintenance roads shall be 40 feet.

410-7.04 Tributary waterways shall be conveyed under maintenance roads in closed conduits or culverts as applicable. Where open channel tributaries cross a maintenance road, a convenient turn-around area shall be provided for maintenance vehicles. The minimum diameter of a turn-around shall be 40 feet.

410-7.05 Right-of-Way for Channels Intersecting Public Roads:
At intersections of the channel with public roads, sufficient right-of-way shall be provided to permit access from the public road to the maintenance road as approved by the Director.

In the event that the channel right-of-way does not intersect a public road, a turn-around or a 15 foot wide access right-of-way shall be provided from a public road to the channel right-of-way at intervals not to exceed one (1) channel mile.

Sec. 410-8 Sedimentation

The determination of sediment yield and proposed mitigation measures of such shall be prepared and recommended by a qualified registered civil engineer, subject to the approval of the Director.

CHAPTER XI. LEVEE DESIGN

Sec. 411-1 Design Flow

Levees shall be designed to accommodate for the CSDD plus freeboard.

Sec. 411-2 Freeboard

411-2.01 The minimum freeboard between the designed CSDD water surface and the levee's top of bank shall be three (3) feet or 0.20 times the specific energy plus one (1) foot, whichever is greater.

411-2.02 An additional one (1) foot, above this minimum of freeboard, shall be required within 100 feet of either side of structures within the levee or whenever the flow is constricted, such as at bridges. An additional 0.50 foot above the minimum is also required at the upstream end, tapering to the minimum at the downstream end of the levee.

Sec. 411-3 Hydraulic Design

See Section 410-3 Hydraulic Design for details.

Sec. 411-4 Structural Design

Levees shall be designed in accordance with the latest revision of the Corps of Engineers Design and Construction of Levees, Engineer Manual, EM1110-2-1913.

Sec. 411-5 Erosion

Mitigation measure for erosion protection shall be prepared and recommended by a registered civil engineer, subject to the approval of the Director.

Sec. 411-6 Fencing

Fencing requirements for levees shall be in accordance with the criteria contained in the constructed channel design, Section 410-6.

Sec. 411-7 Easements/Right-Of-Way

Access, easements and right-of-way shall be in accordance with the requirements set forth in Section 410-7. (Constructed Channels).

Sec. 411-8 Sedimentation

Mitigation measures shall be prepared and recommended by a qualified, registered engineer, subject to the approval of the Director.

Sec. 411-9 Maintenance

A maintenance plan and an entity with taxing power to maintain levees shall be established, subject to the approval of the Director. Neither the County nor County Service Area will maintain a levee.

CHAPTER XII. NATURAL CHANNELS

Sec. 412-1 Delineation

All natural channels shall be identified and clearly delineated on the plans with the appropriate floodplain designation.

For defined natural channels, the Floodplain and Floodway Boundaries shall be delineated, subject to the approval of the Director.

Sec. 412-2 Setback

The minimum setback from the top of bank of a natural channel with side slopes steeper than two (2) horizontal to one (1) vertical, shall be a two (2) to one (1) slope plus a 10 foot wide buffer strip. The setback shall be measured from the toe of the slope. Where the slopes are flatter than two (2) to one (1), the required setback shall be a minimum of 10 feet from the Floodway limit.

Sec. 412-3 Tie-Ins

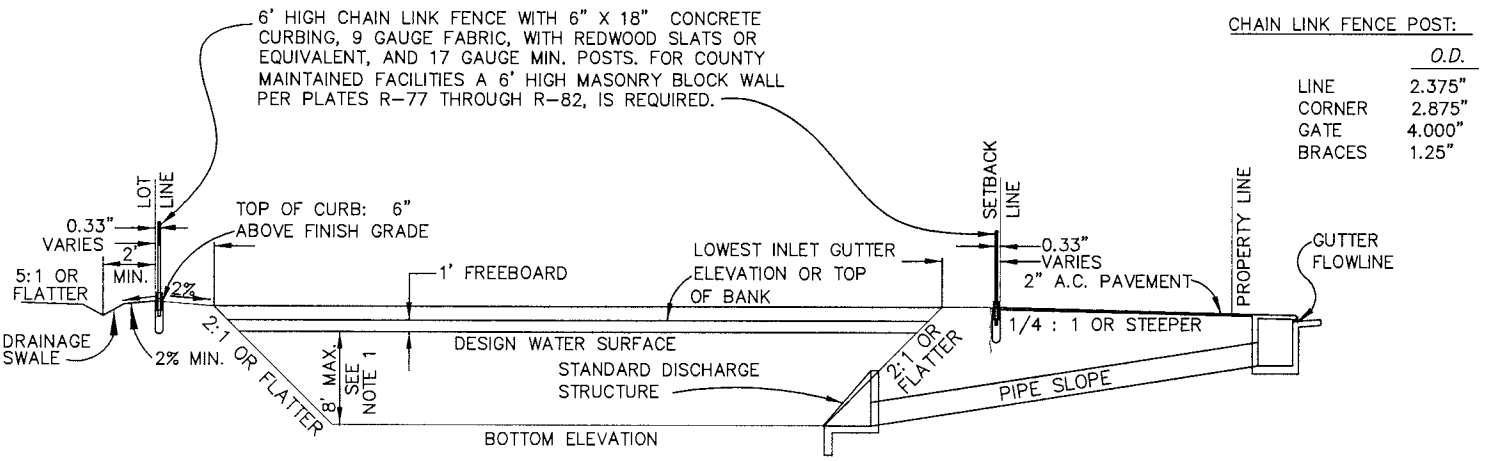
Where natural channels merge into constructed channels, the tie-ins shall be designed in a manner to dissipate energy and protect against erosion. The design for such tie-ins shall be in accordance with acceptable engineering practices and approved by the Director.

Sec. 412-4 Relocation

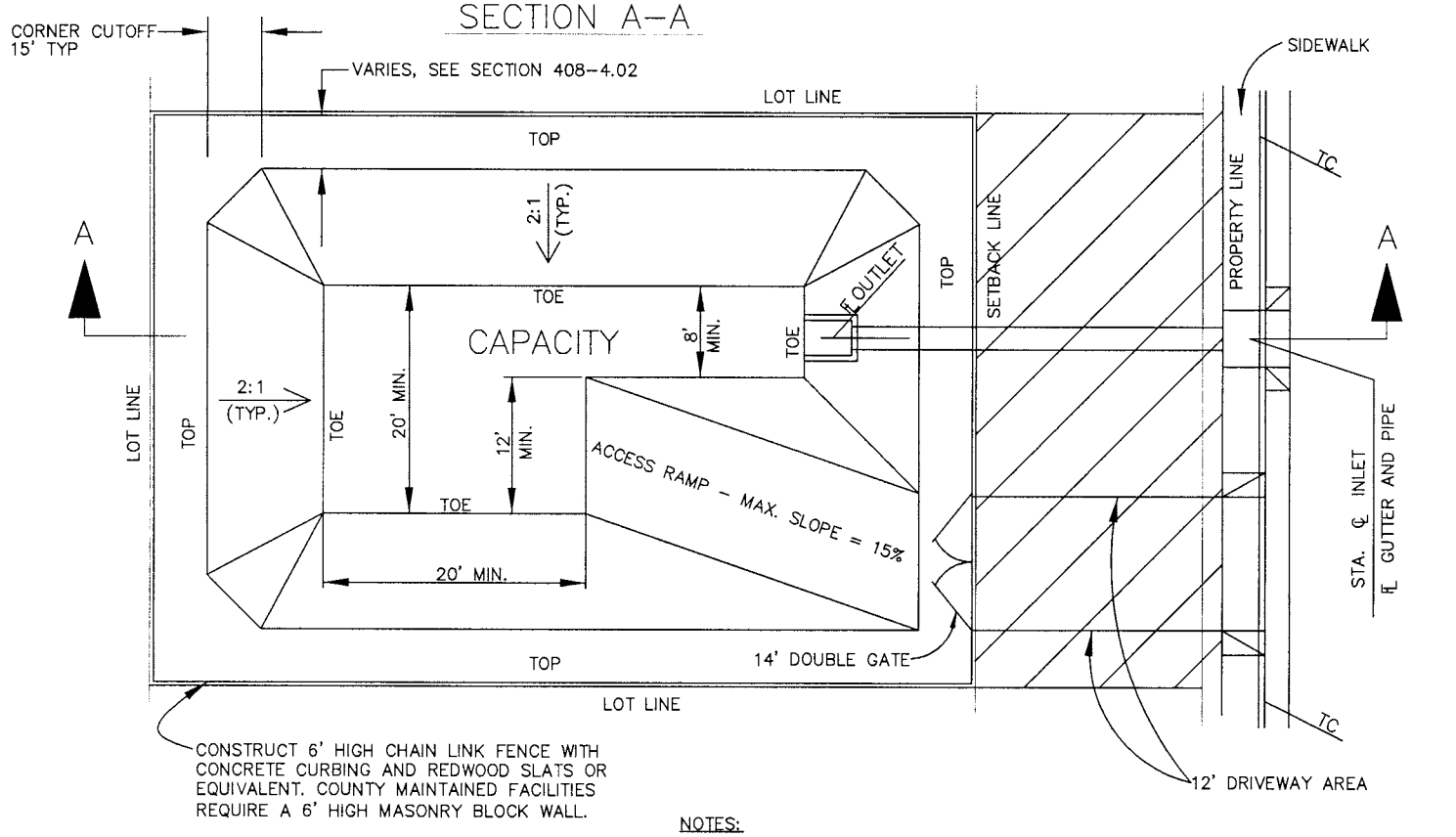
Should an existing natural channel be relocated, the channel shall be designed in accordance with the criteria specified herein for constructed channels.

Sec. 412-5 Use of Natural Facilities

All applicable Federal and State permits and requirements shall be required for any operation that would discharge dredged or fill material in any waters of the United States (normally channels identified with blue lines on the U.S.G.S. maps).



SECTION A-A



SUMP PLAN

LEGEND

TOP – TOP OF CURB

FG – FINISH GRADE

OG – ORIGINAL GROUND

INDICATES 2" A.C. OVER NATIVE SOIL WHICH HAS BEEN TREATED WITH A PERMANENT SOIL STERILANT SUBJECT TO THE APPROVAL OF THE DIRECTOR.

NOTES:

1. MAY EXCEED 8' IF SIDE SLOPES ARE 3:1 OR FLATTER; OR A SLOPE STABILITY ANALYSIS IS PROVIDED.
2. VARIATIONS TO THE DIMENSION MAY BE APPROVED BY THE DIRECTOR.
3. ADDITIONAL REQUIREMENTS MAY BE IMPOSED AS PART OF THE CONDITIONS ISSUED.
4. COMPACT O.G. TO 95% FOR MINIMUM OF SIX (6) INCHES UNDER 2" A.C.
5. WHEN FENCE IS SET ON FRONT R/W LINE SIDEWALK SHALL BE FULL WIDTH.
6. TACK WELD FABRIC AND HARDWARE TO POSTS.
7. TREAT BLOCK WALL WITH ANTI-GRAFFITI PRODUCT SUBJECT TO APPROVAL OF THE DIRECTOR.
8. CONSTRUCT 6" X 18" CONCRETE CURB UNDER GATE W/ TWO (2) #4 REBAR TOP AND BOTTOM.

PLOTTED: 02/25/2010

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Revisions Date	Desc	DATE: 8-18-1995	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	SUMP DETAILS	PLATE NO. D-1
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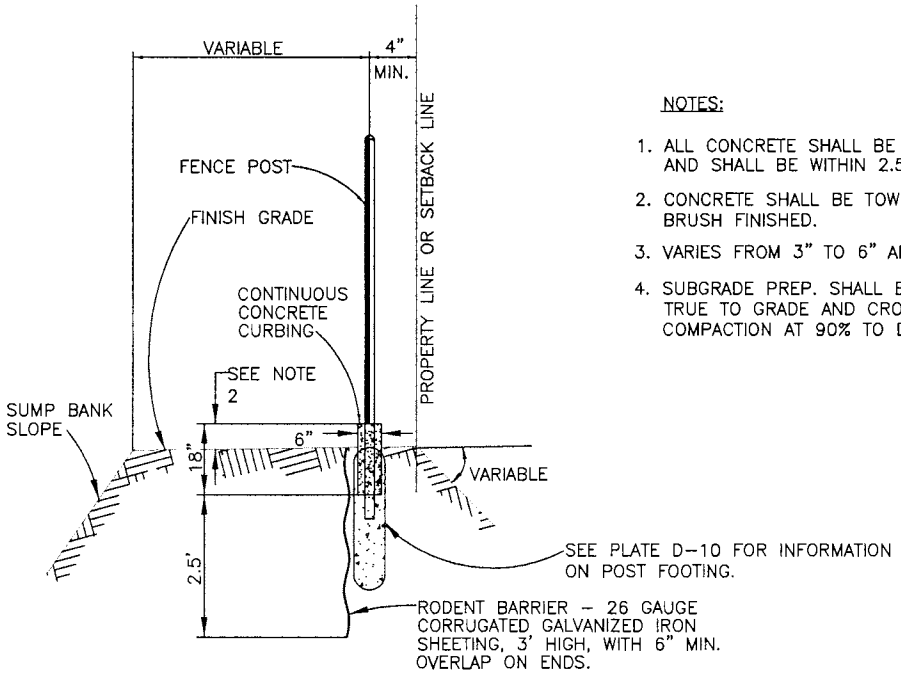
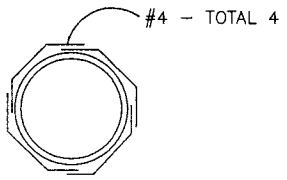
.	.	DRAWN BY: K.S.			
.	.	CHECKED BY: A.A.			



NOTES:

1. ALL CONCRETE SHALL BE CLASS 3 CONCRETE AND SHALL BE WITHIN 2.5" TO 5.5" SLUMP.
2. CONCRETE SHALL BE TOWELED SMOOTH AND BRUSH FINISHED.
3. VARIES FROM 3" TO 6" ABOVE FINISH GRADE.
4. SUBGRADE PREP. SHALL BE CONSTRUCTED TRUE TO GRADE AND CROSS SECTION WITH COMPACTION AT 90% TO DEPTH OF 6"

CURBING AND RODENT BARRIER DETAILS



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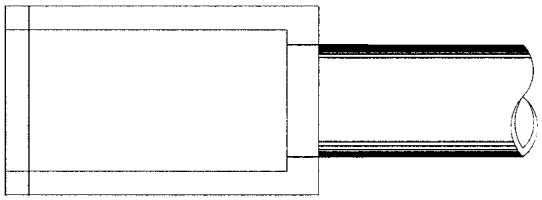
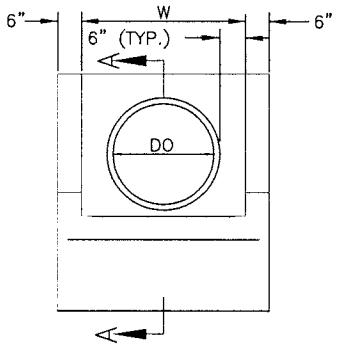
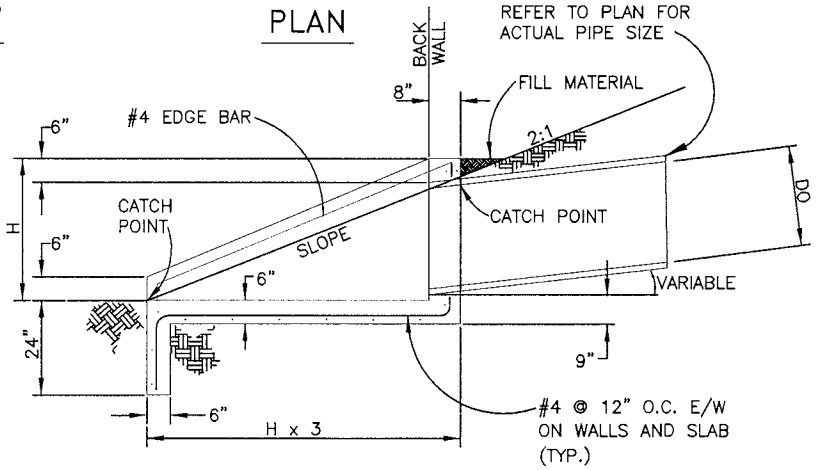


PLAN



FRONT



SECTION A-A

DISCHARGE STRUCTURE

PLOTTED: 02/25/2010

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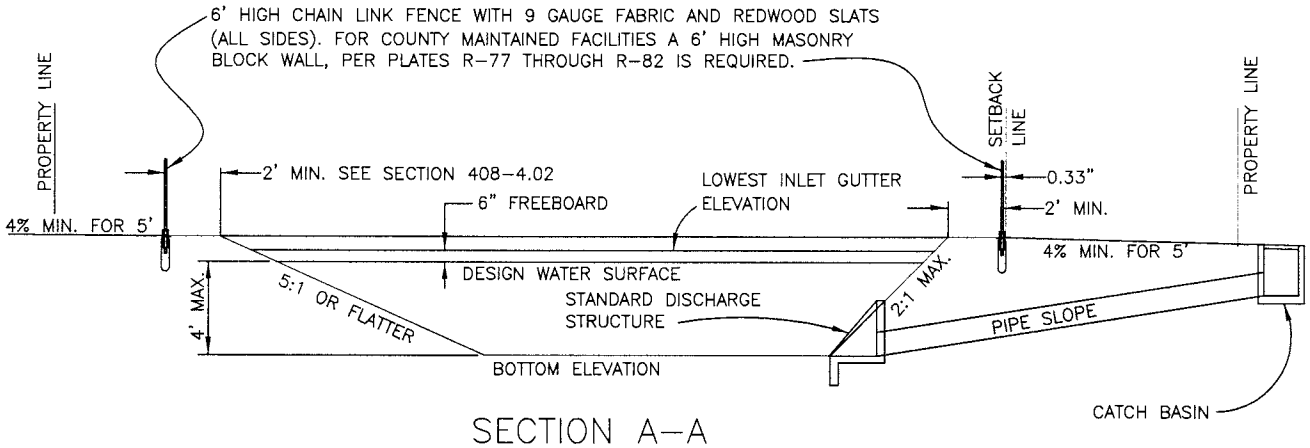
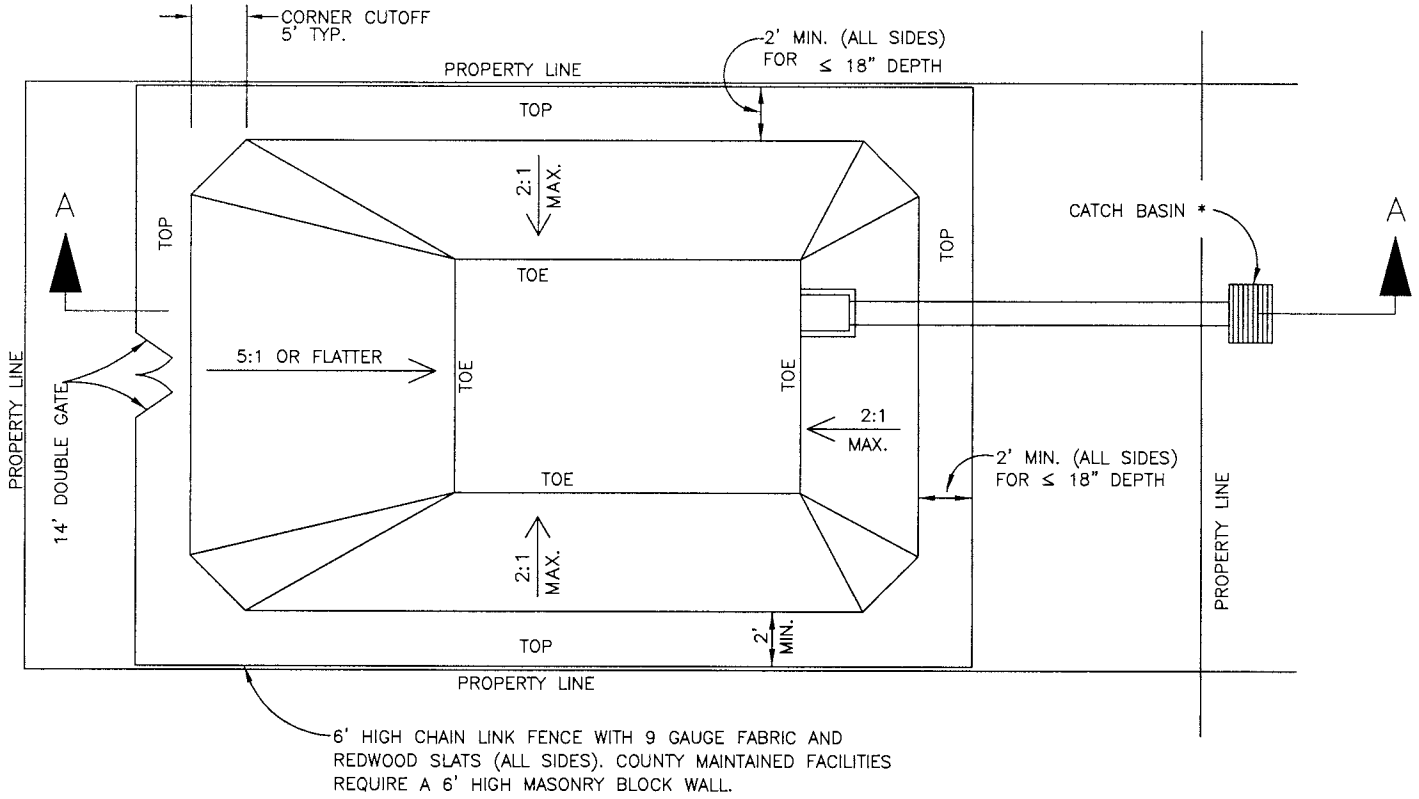
Revisions		DATE: 3-31-1995	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	CURBING, RODENT BARRIER, AND DISCHARGE STRUCTURE DETAILS	PLATE NO. D-2
Date	Desc	DESIGNED BY: R.J.L.			
4/09	B HILL	DRAWN BY: K.S			
.	.	CHECKED BY: C.L.			



SECTION A-A



SUMP PLAN

* NO CURB AND GUTTER SHOWN

NOTE:
SEE ADDITIONAL NOTES AND REQUIREMENTS FOR CHAIN-LINK FENCES AND MASONRY WALLS ON PLATE D-1

PLOTTED: 02/25/2010

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Revisions		DATE: 8-18-1995	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	SHALLOW SUMP DETAILS	PLATE NO. D-3
Date	Desc				
4/09	B.D.H.	DESIGNED BY: R.J.L.			
.	.				
.	.	DRAWN BY: K.S			
.	.				
.	.	CHECKED BY: C.L.			
.	.				

PLOTTED: 02/25/2010

Revisions		
Date	Desc.	
4/10/09	REVISED	

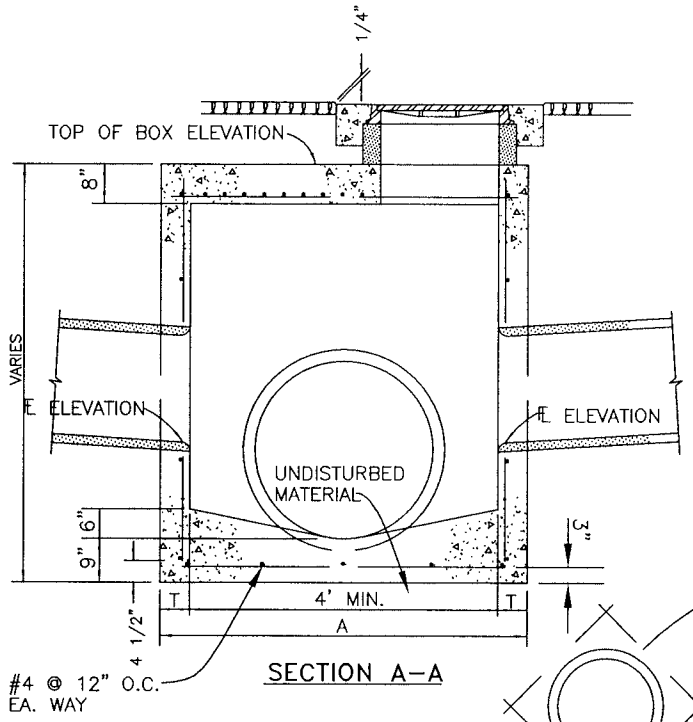
DATE: 8-18-1995
DESIGNED BY: A.A.
DRAWN BY: D.M.
CHECKED BY: G.F.

COUNTY OF KERN
STATE OF CALIFORNIA
DEVELOPMENT STANDARD

TYPE "B" MINOR STRUCTURE - JUNCTION BOX

PLATE NO. D-4

222



SECTION A-A

DETAIL A
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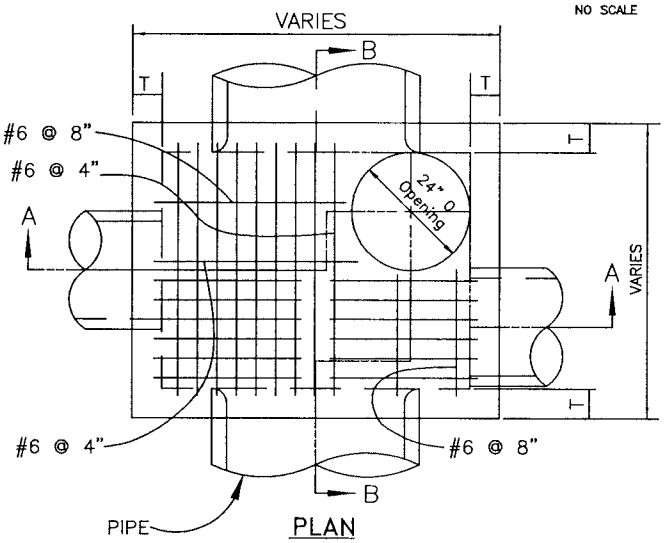
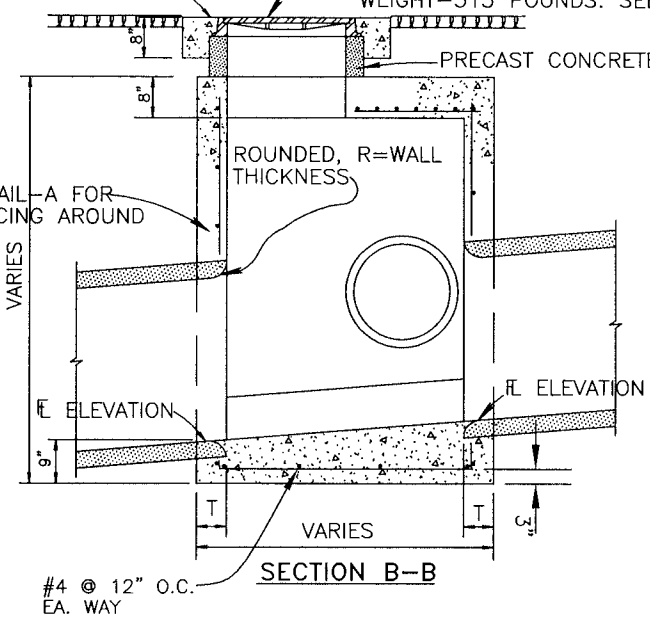
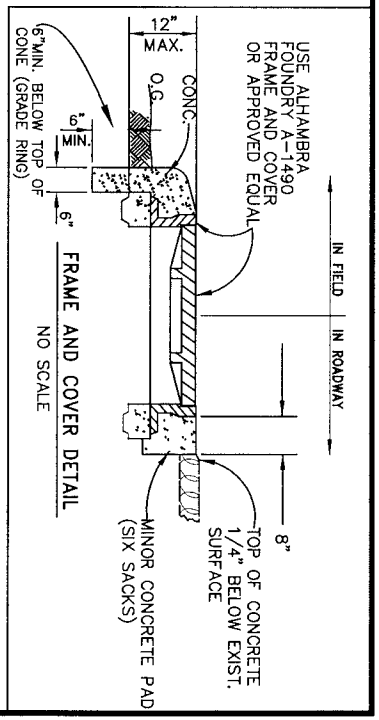


PLAN



SECTION B-B



FRAME AND COVER DETAIL
NO SCALE

TYPE "B" MINOR STRUCTURE

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Desc	Date	
REVISED	4/10/09	

PLOTTED: 02/25/2010

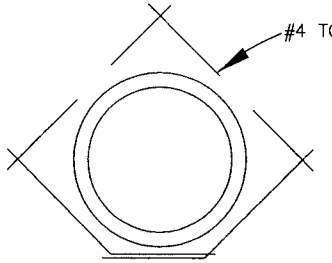
DATE: 8-18-1995
DESIGNED BY: A.A.
DRAWN BY: D.M.
CHECKED BY: G.F.

COUNTY OF KERN
STATE OF CALIFORNIA
DEVELOPMENT STANDARD

TYPE "C" MINOR STRUCTURE— MANHOLE

PLATE NO. D-5

223



DETAIL A
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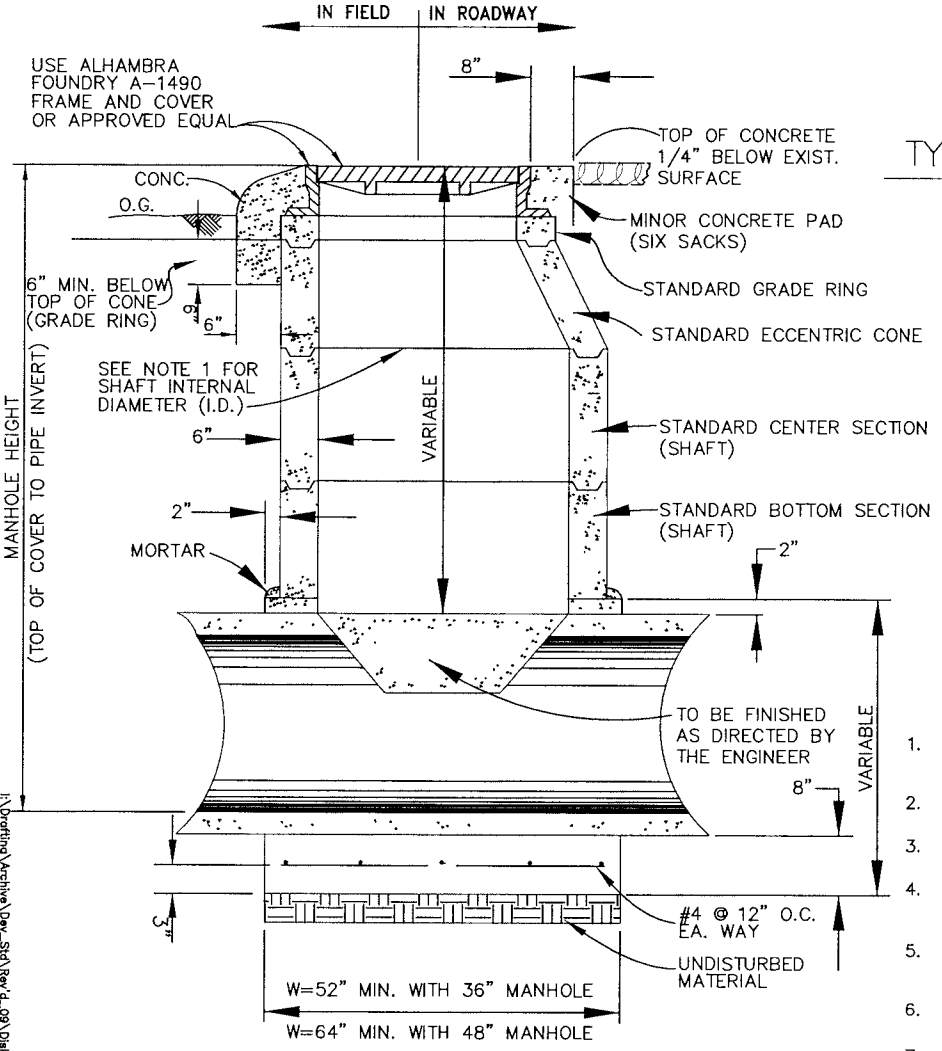

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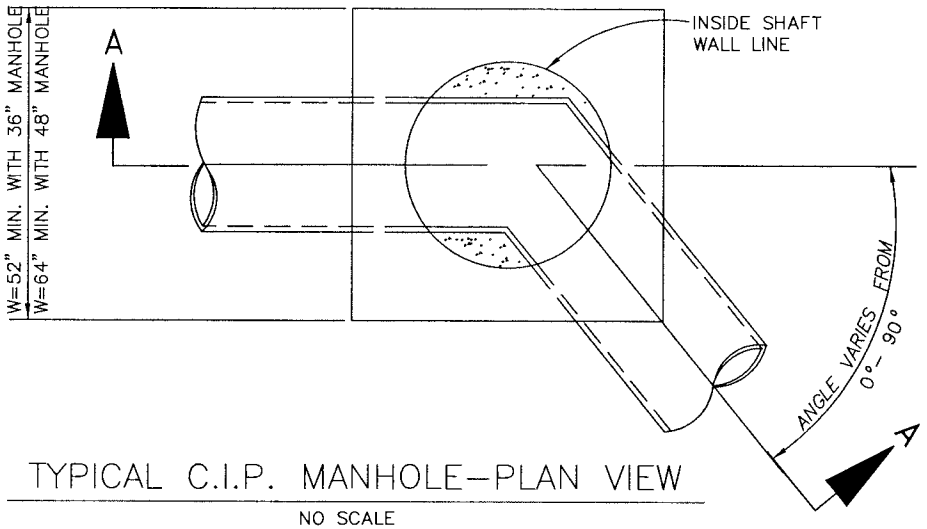
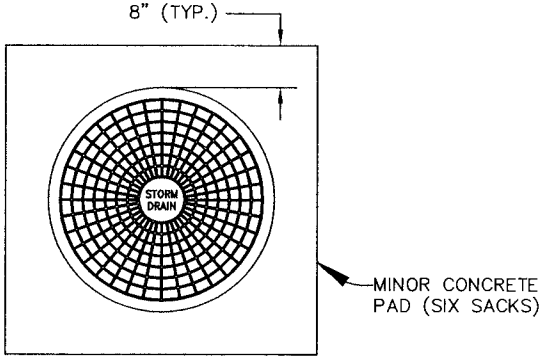


TYPICAL C.I.P. MANHOLE—PLAN VIEW
NO SCALE



MANHOLE COVER AND CONCRETE PAD
NO SCALE

NOTES:

1. MANHOLE CONSTRUCTED ON CONCRETE PIPE OF 36" I.D. OR GREATER SHALL USE 48" SHAFT; CONCRETE PIPE WITH LESS THAN 36" I.D. SHALL USE 36" SHAFT.
2. USE COMBINATION OF CONE AND SHAFT AS DIRECTED BY THE ENGINEER.
3. ALL CONCRETE TO BE MINOR CONCRETE.
4. ALL REINFORCING TO BE NO.4 BARS AT 12" O.C., 1 1/2" CLEAR OF INSIDE FACE UNLESS OTHERWISE NOTED. SEE DETAIL "A" FOR REINFORCING AROUND PIPE.
5. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AFTER FABRICATION EXCEPT FRAME AND COVER.
6. LOCATION OF FRAME AND COVER TO BE DETERMINED BY THE ENGINEER.
7. ALL REINFORCEMENT FOR SURFACES IN CONTACT WITH THE GROUND SHALL BE PROTECTED WITH NOT LESS THAN 2" OF CONCRETE.
8. WORDING ON MANHOLE TO READ "STORM DRAIN".

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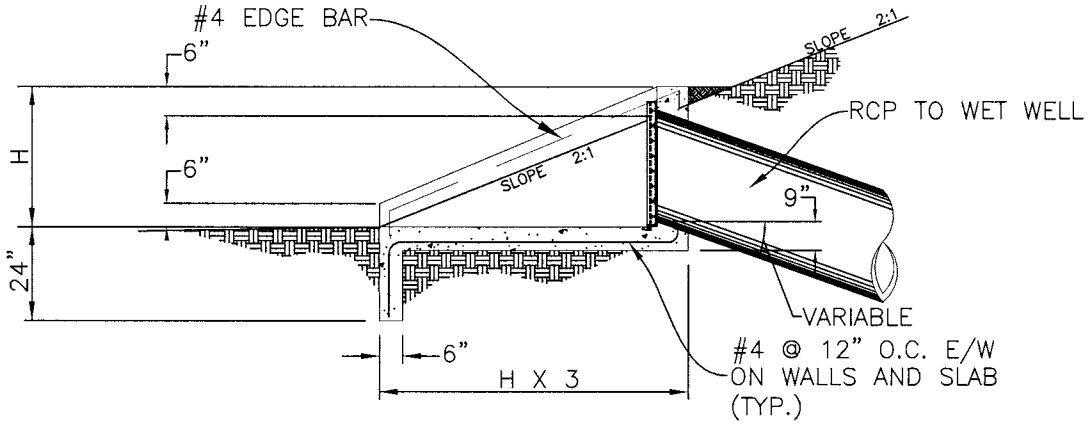
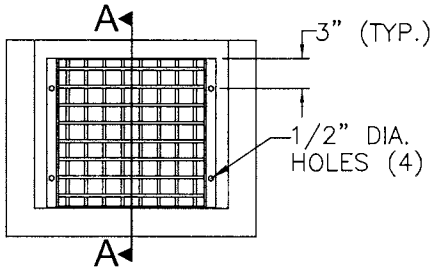


SECTION A–A



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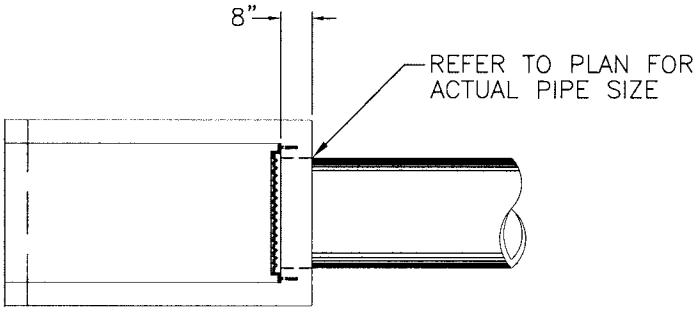

PLAN

INLET STRUCTURE

GRATE NOTES:

1. GRATE FABRICATED OR EQUIVALENT SHELF ITEM– ALL PARTS & PRODUCTS GALVANIZED
2. FRAME CONSTRUCTED W/ 1/4" x 3/4" x 2" x LENGTH (VARIES TO PIPE SIZE) ANGLE IRON
3. MIN. FOUR– 3/8"X 3" S.S. RED HEAD ANCHOR BOLTS FLAT LOCK WASHER, 2 EA PER VERTICAL ANGLE 3" FROM TOP & BOTTOM OF FRAME.
4. FOUR–1/2" DIA. HOLES IN FRAME
5. GRATE OPENING $1\frac{3}{16}$" x 2" O.C.
6. 1/4" DIA ROD WELDED TO FRAME ON ALL SIDES

NOTES:

1. PIPE DETAIL REFER TO PLATE D–2.

PLOTTED: 02/25/2010

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Revisions Date	Desc	4–30–2009	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	PUMP STATION INLET STRUCTURE	PLATE NO. D–6
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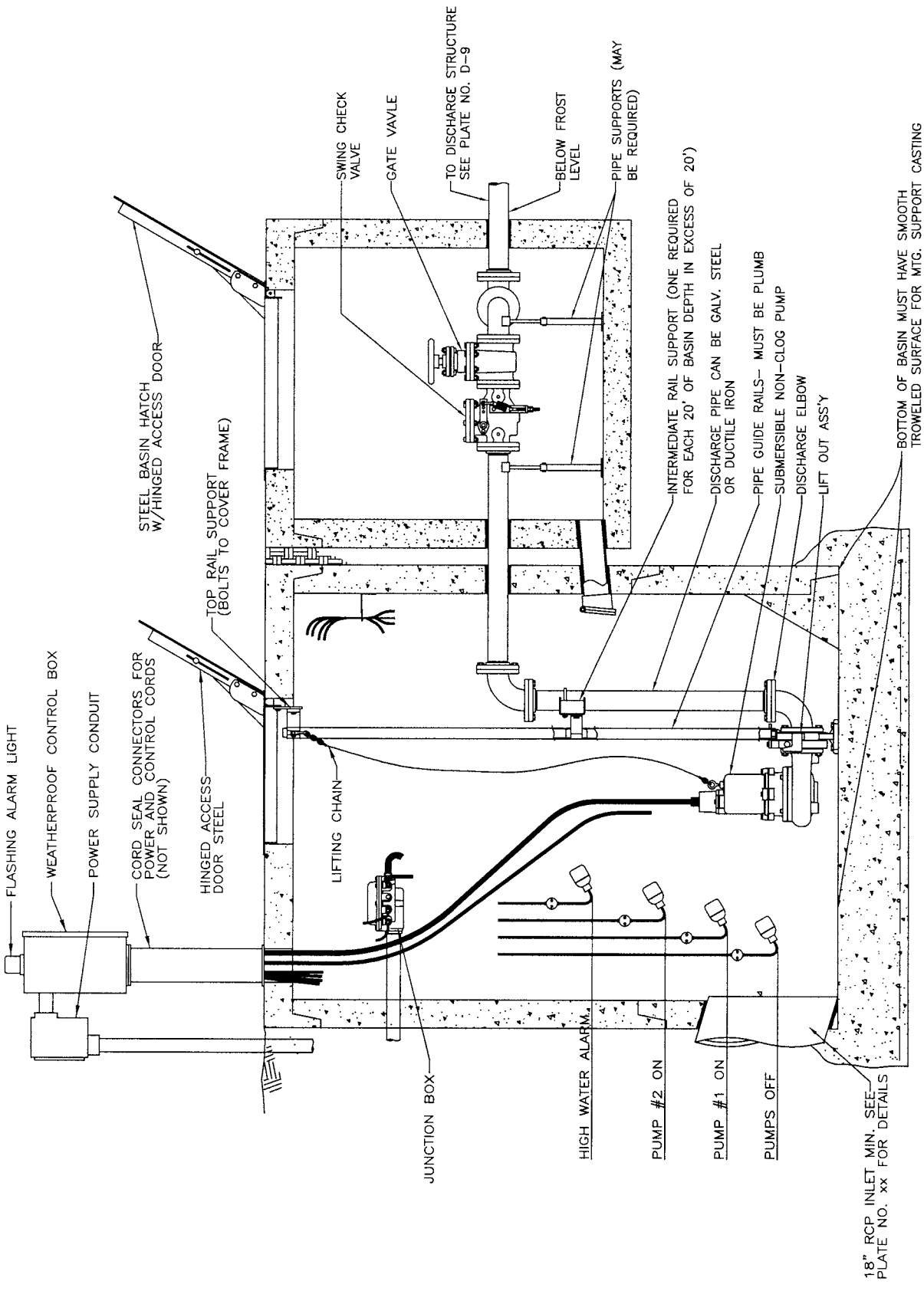
.	.	DRAWN BY: B.D.H.			
.	.	CHECKED BY: A.A.			



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4-30-2009

DESIGNED BY: F.E.M.

DRAWN BY: B.D.H

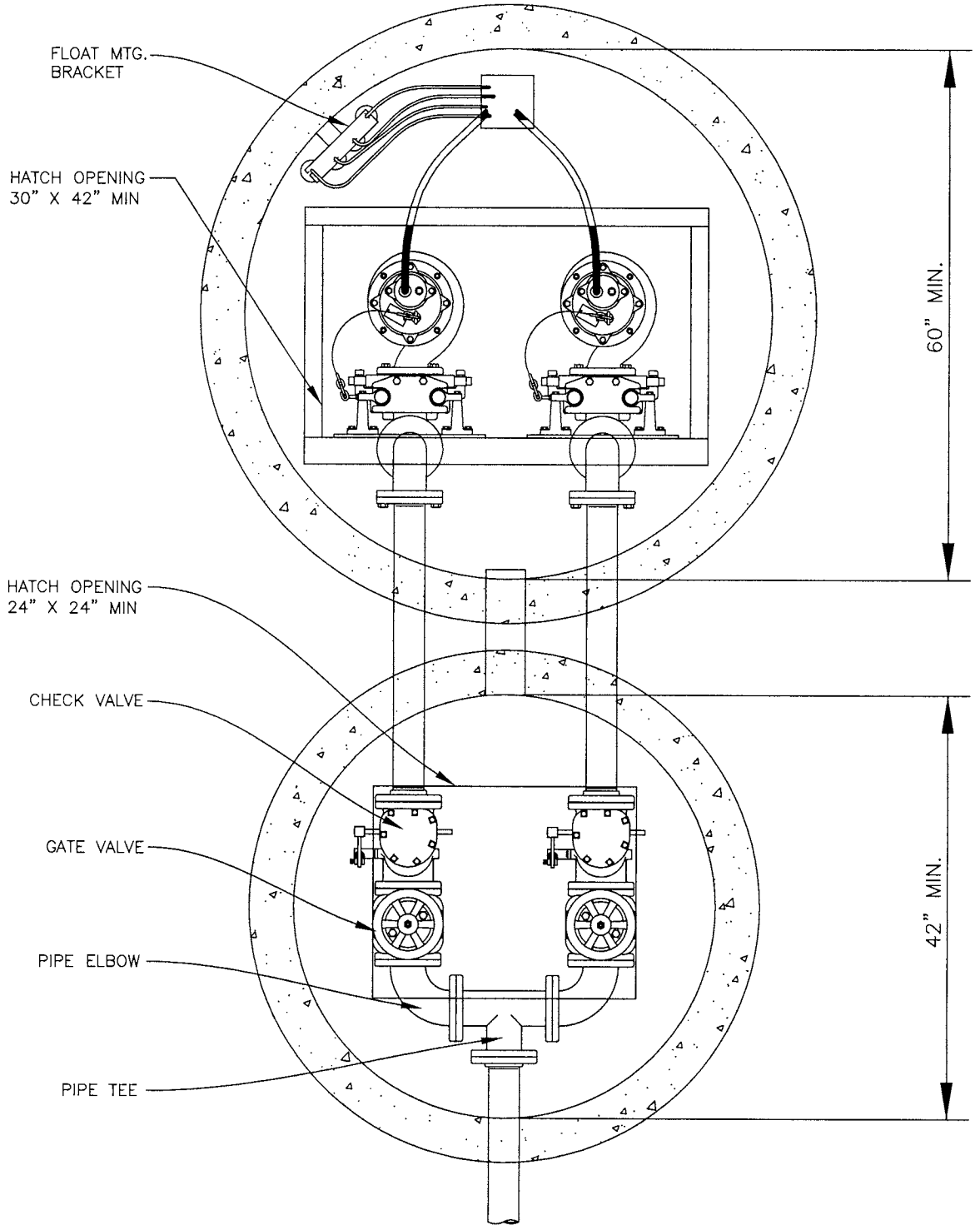
CHECKED BY: K.L.H.

COUNTY OF KERN
STATE OF CALIFORNIA
DEVELOPMENT STANDARD

DUPLEX PUMP STATION

PLATE NO.

D-7



*MODIFIED FROM FEMyers.com NON-CLOG, 3" DISCHARGE, DUPLEX PUMP INSTALLATION DRAWING ESS-2228b

PLOTTED: 02/25/2010

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4-30-2009

DESIGNED BY: F.E.M.

DRAWN BY: B.D.H.

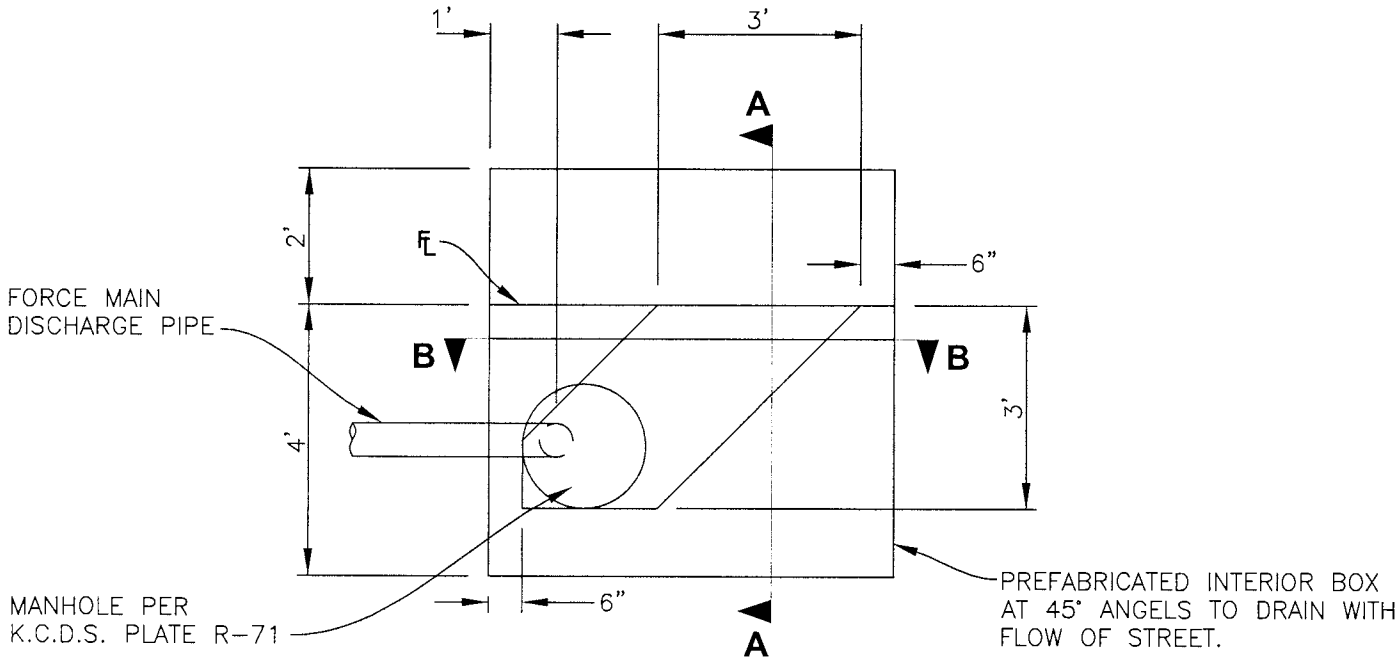
CHECKED BY: K.L.H.

COUNTY OF KERN
STATE OF CALIFORNIA
DEVELOPMENT STANDARD

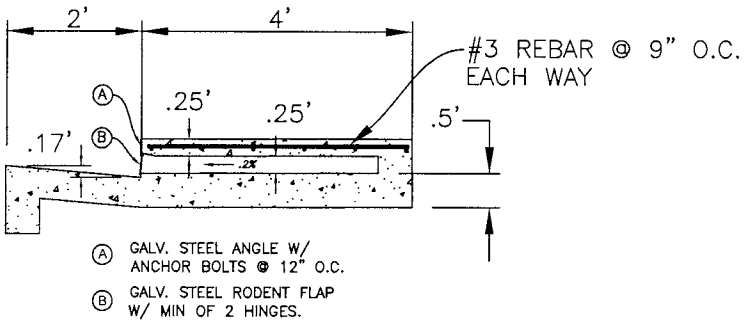
PLAN VIEW DUPLEX PUMPS

PLATE NO.

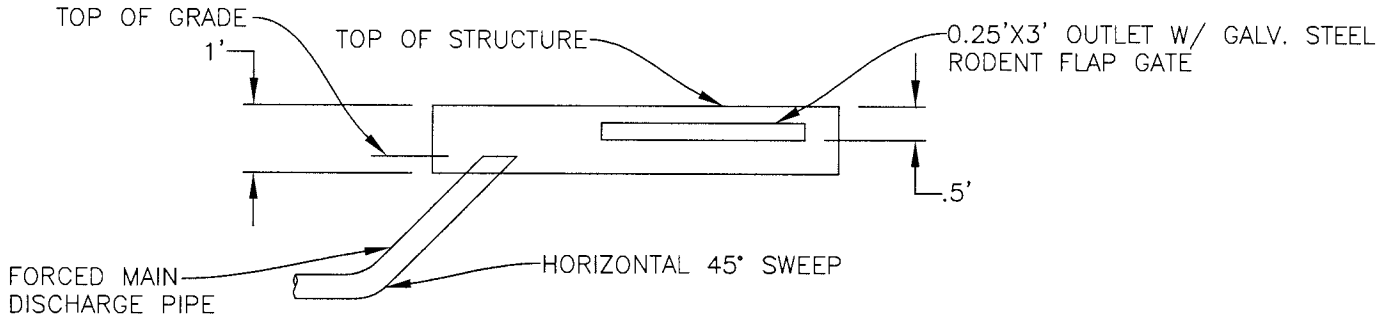
D-8



DISCHARGE STRUCTURE



SECTION A–A



SECTION B–B

PLOTTED: 02/25/2010

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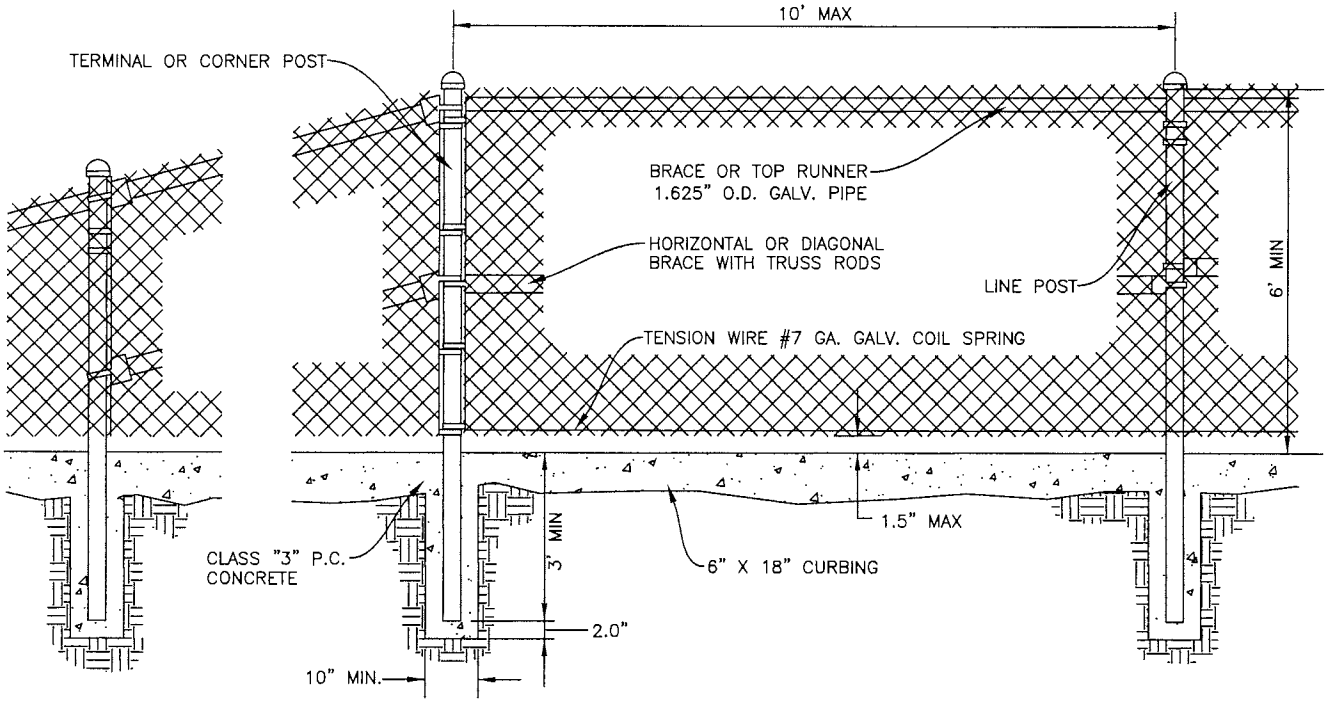
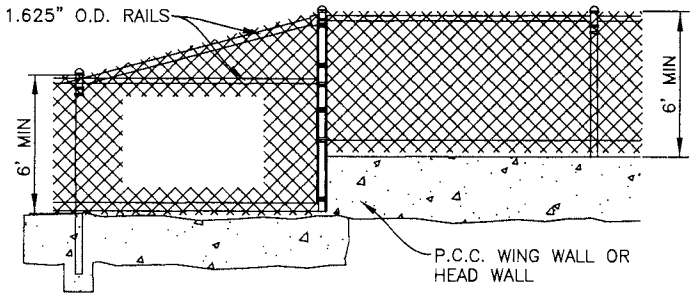
		DRAWN BY: B.D.H.			
		CHECKED BY: A.A.			



TYPICAL CHAIN LINK FENCE DETAIL



TYPICAL DETAIL AT
CULVERT ENDWALLS

FENCING SPECIFICATIONS:

1. FENCING FABRIC SHALL BE 9 GUAGE, 2" MESH, AFTER WEAVING, KNUCKLED TOP AND BOTTOM, 6' HIGH GALV.
2. CORNER POSTS SHALL BE 2–⅞" O.D. GALV. PIPE.
3. LINE POST 2–⅜" O.D. GALV. PIPE.
4. PRIVACY SLATS SHALL BE 2–$\frac{3}{16}$" X ¼".

NOTES:

1. INSTALLATION OF FENCING AND GATES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "STANDARD SPECIFICATION, STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION," APPROVED CURRENT EDITION.
2. CONCRETE CURBING SHALL BE CONSTRUCTED UNDER ALL FENCES. CURBING SHALL BE 6" X 18", CLASS 3 CONCRETE.
3. CORNER POST SHALL BE INSTALLED AT ALL ANGLES IN FENCE LINE IN EXCESS OF 10".
4. END, CORNER, AND GATE POSTS SHALL BE BRACED TO THE NEAREST LINE POST WITH GALV. DIAGONAL OR HORIZONTAL BRACES USED AS COMPRESSION MEMBERS AND GALV. 0.375" STEEL TRUSS RODS WITH TURNBUCKLES OR TRUSS TIGHTENER USED AS TENSION MEMBERS.
5. FABRIC SHALL BE FASTENED TO GATE POST, TERMINAL POST, OR CORNER POST WITH 3" X 3/4" STRETCHER BAR BONDS AT 8" ON CENTER.
6. FABRIC SHALL BE FASTENED TO LINE POST, LAST RUNNER, AND BOTTOM TENSION WIRES WITH FABRIC BONDS SPACED APPROX. 14" APART.
7. FABRIC SHALL CONFORM TO ASTM A–392, CLASS 1.
8. SUBGRADE PREPARATION SHALL BE CONSTRUCTED TRUE TO GRADE AND CROSS SECTION WITH COMPACTION OF 85% TO A DEPTH OF 0.5"
9. WHEN REDWOOD SUBURBAN SCREEN, OR EQUIVALENT IS REQUIRED IT SHALL BE CONSTRUCTED SO THAT THE SLATS ARE LOCKED INTO POSITION AND CAN ONLY BE REMOVED WITH TOOLS.
10. FENCE FABRIC IS TO BE TACK WELDED TO POSTS IN THREE PLACES (TOP, CENTER, AND BOTTOM). FENCE HARDWARE IS TO BE TACK WELDED AND GROUND SMOOTH. ALL EXPOSED METAL PARTS ARE TO BE GALV. PRIOR TO INSTALLATION.

PLOTTED: 02/25/2010

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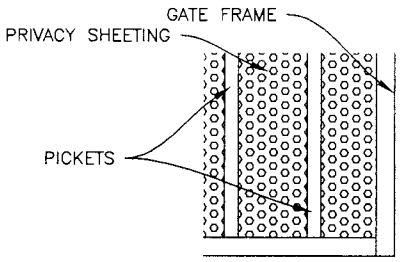
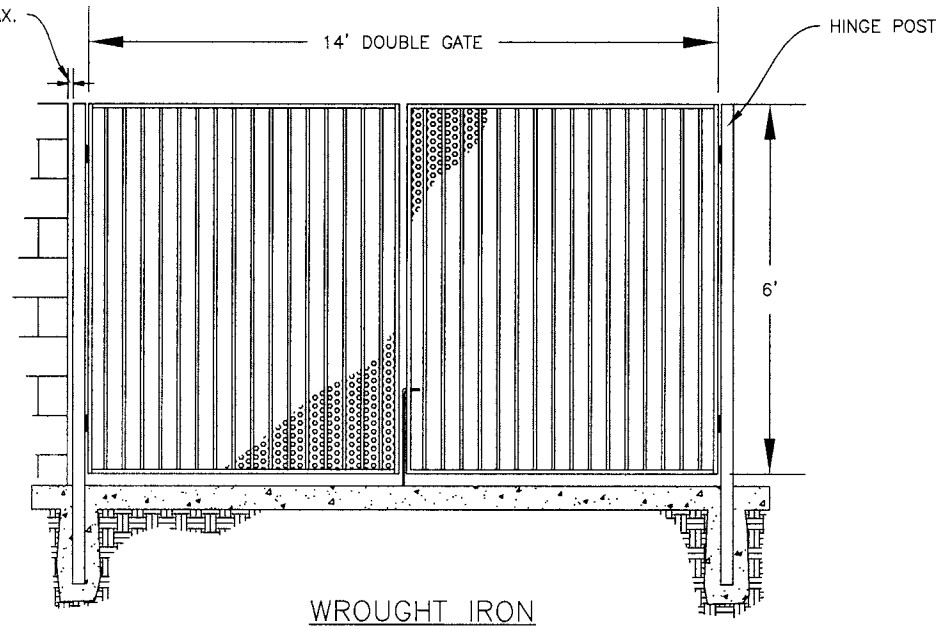
Revisions Date	Desc	DATE: 6-6-2009	COUNTY OF KERN STATE OF CALIFORNIA DEVELOPMENT STANDARD	CHAIN LINK FENCING SPECIFICATIONS	PLATE NO. D–10
.	.	DESIGNED BY: K.L.H.			
.	.	DRAWN BY: B.D.H.			
.	.	CHECKED BY: A.A.			
.	.				

WROUGHT IRON GATE SPECS:

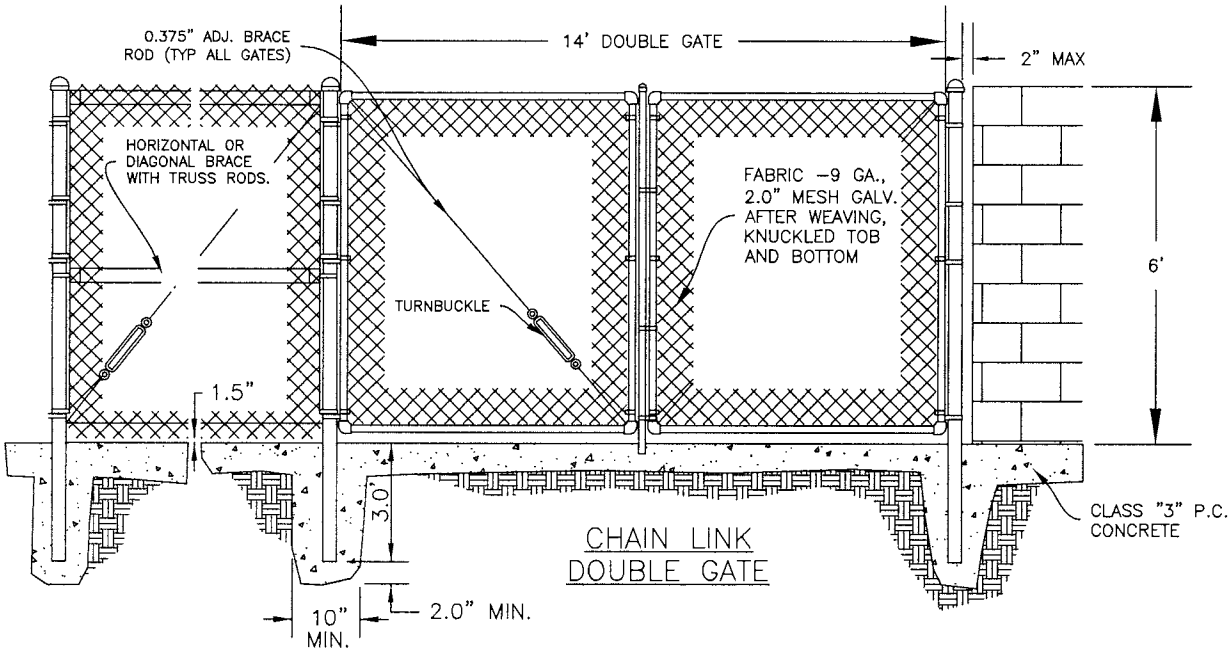
1. HINGE POST SHALL BE A MIN. OF 4x4x3/16" SQ TUBING.
2. GATE FRAME SHALL BE A MIN. 1-1/2" SQ. TUBING.
3. PICKETS SHALL BE A MIN. 3/4" SQ TUBING WITH 4" MAX CLEAR DIMENSION.
4. PRIVACY SHEETING SHALL BE PERFORATED SHEET METAL, 24 GAUGE, 1/16" DIM HOLE, 1/8" STAGGERED CENTER.
5. GATE SHALL BE A 14' DOUBLE GATE.
6. GATE LATCH SHALL HAVE COMMERCIAL GRADE LOCKING DEVICE FOR 3/8" PADLOCK SHANK OR A LICKING DEVICE THAT CAN BE KEYED TO THE STANDARD K.C.E.S.S. KEY-CORE.



PRIVACY SHEETING DETAIL



WROUGHT IRON DOUBLE GATE



CHAIN LINK DOUBLE GATE

DOUBLE DRIVE GATE

WIDTH-14'
HEIGHT-6'
FRAME-1.875" O.D. GALV. PIPE 2.72LB/FT
COMMERCIAL LOCKING DEVICE WITH DROP ROD

NOTES:

1. CURBING AS SPECIFIED BY COUNTY OF KERN DEVELOPMENT STANDARDS, PLATE D-2.
2. END, CORNER, AND GATE POSTS SHALL BE BRACED TO THE NEAREST LINE POST WITH GALV. DIAGONAL OR HORIZONTAL BRACES USED AS COMPRESSION MEMBERS AND GALV. 0.375" STEEL TRUSS RODS WITH TURNBUCKLES OR TRUSS TIGHTENERS USED AS TENSION MEMBERS.
3. WHEN REDWOOD SUBURBAN SCREEN, OR EQUIVALENT, IS REQUIRED IT SHALL BE CONSTRUCTED SO THAT THE SLATS ARE LOCKED INTO POSITION AND CAN ONLY BE REMOVED WITH TOOLS.
4. FRAMES SHALL BE MADE WITH FITTINGS OR WELDS GROUND SMOOTH, AND GALVANIZED.
5. CHAIN LINK FENCE FABRIC SHALL CONFORM TO ASTM: A-392, CLASS 1, AND BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 80-4 OF THE "STANDARD SPECIFICATIONS, STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION", APPROVED CURRENT EDITION.

PLOTTED: 02/25/2010

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.	.	DESIGNED BY: K.L.H.			
.	.	DRAWN BY: B.D.H.			
.	.	CHECKED BY: A.A.			
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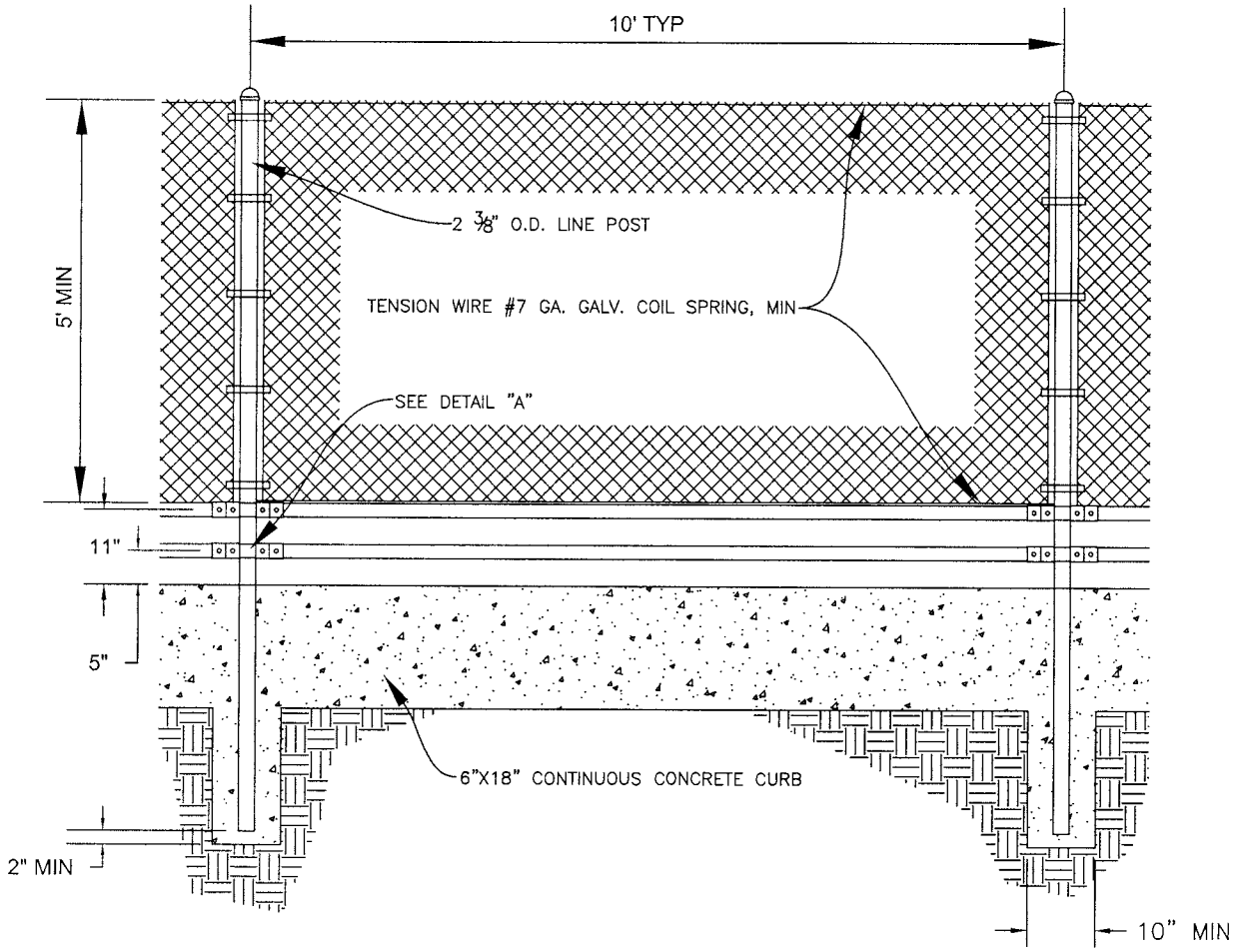
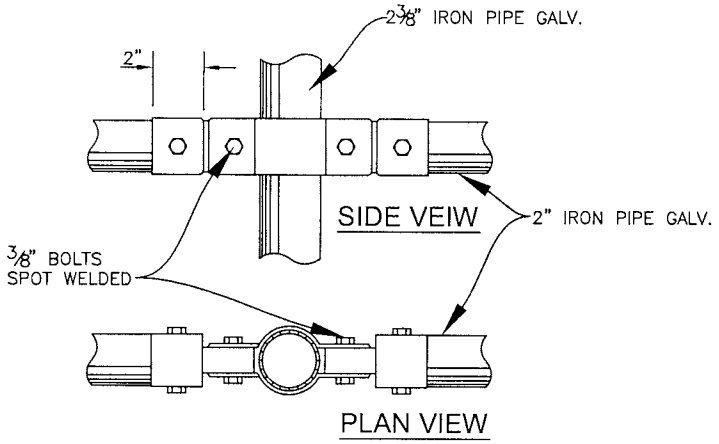


TRANSVERSE PROTECTION BAR



DETAIL "A"

NOTES:

1. ALL CONCRETE SHALL BE CLASS 3.
2. SEE PLATE D-10 FOR ADDITIONAL FENCE DETAILS.
3. ALL EXPOSED METAL PARTS ARE TO BE GALV PRIOR TO INSTALLATION.
4. HARDWARE IS TO BE TACK WELDED AND GROUND SMOOTH AND GALV.
5. SEE PLATE D-2 FOR RODENT BARRIER DETAILS.

PLOTTED: 02/26/2010

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6-5-2009

DESIGNED BY: K.L.H.

DRAWN BY: B.D.H.

CHECKED BY: A,J.L.

COUNTY OF KERN
STATE OF CALIFORNIA
DEVELOPMENT STANDARD

FLOOD ZONE FENCING SPECIFICATIONS

PLATE NO. D-12

Appendix J
Acoustic Analysis

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Appendix J1
Acoustical Analysis of the Discovery Solar PV and Storage Project

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ACOUSTICAL ANALYSIS REPORT

Discovery Solar PV and Storage Project

Kern County, California

December 2025

Prepared for

Discovery Solar PV and Storage, LLC
11455 El Camino Real # 160
San Diego, CA 92130

Prepared by

TETRA TECH
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614

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EXECUTIVE SUMMARY

Tetra Tech, Inc. (Tetra Tech) has completed an acoustic assessment for the Discovery Solar PV and Storage Project (Project) proposed by Discovery Solar PV and Storage, LLC, in Kern County, California. Baseline ambient sound level measurements were taken in proximity to the Project, and an analysis was completed to evaluate the expected sound levels resulting from Project construction and operations. The overall objective of this study was to determine the feasibility of the Project to meet Federal Transit Administration (FTA) construction noise guidelines and operate in compliance with the Kern County General Plan Noise Element 65 A-weighted decibel (dBA) day-night averaged sound level (L_{dn}) exterior limit and 45 dBA L_{dn} interior limit, and the Kern County Zoning Ordinance (Kern County 2021) 65 dBA L_{dn}, 65 dBA maximum sound level (L_{max}) from 10 p.m. until 7 a.m.

A short-term baseline ambient survey was conducted to quantify the existing sound environment relative to the Project site. The survey found that the primary source of ambient noise was related to operations of adjacent energy facilities, as well as sound sources related to agricultural operations.

Construction noise was calculated at noise sensitive receptors for all construction activities and was found to be in compliance with all applicable noise regulations. Operational sound propagation modeling was conducted using the Computer-Aided Noise Abatement (CadnaA) program, a comprehensive three-dimensional acoustic modeling computer simulation software, with calculations made in accordance with the International Organization for Standardization standard 9613-2 “Attenuation of Sound during Propagation Outdoors.” The noise model incorporated sound emission data provided by equipment manufacturers for the inverter skids and battery energy storage system units, while the sounds emission data for the substation transformers were derived from megavolt-ampere rating and dimensions. Results of the noise model found that the Project will comply with all applicable noise regulations.

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Table of Contents

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Acronyms and Abbreviations

µPa	microPascal
A	Exclusive Agriculture
A-1	Limited Agriculture
ANSI	American National Standards Institute
Applicant	Discovery Solar PV and Storage, LLC
BESS	battery energy storage system
CadnA	Computer Aided Noise Analysis
CEQA	California Environmental Quality Act
dB	decibel
dBA	A-weighted decibel
dBL	linear decibel
E	Estate
EIR	Environmental Impact Report
FP	Floodplain
FPS	Floodplain Secondary
FTA	Federal Transit Administration
gen-tie	generation-tie line
GWh	gigawatt-hour
Hz	hertz
in/sec	inch per second
ISO	International Organization for Standardization
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
L_{dn}	day-night averaged sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_P	sound pressure level
L_w	sound power
MVA	megavolt ampere

MW	megawatt
ML	monitoring location
NSA	noise-sensitive area
OSHA	Occupational Health and Safety Administration
PL	Platted Lands
PPV	Peak-Particle-Velocity
Project	Discovery Solar PV and Storage Project
PV	photovoltaic
RS	Residential Suburban
SCE	Southern California Edison
SR	State Route
Tetra Tech	Tetra Tech, Inc.
UPRR	Union Pacific Railroad
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
VdB	vibration decibel
WE	Wind Energy

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) was retained by Discovery Solar PV and Storage, LLC (Applicant) to prepare an acoustical analysis to support an evaluation of compliance with applicable California Environmental Quality Act (CEQA) noise requirements and county noise ordinances, which are detailed in Section 3.0 of this report. This Acoustical Analysis Report presents the methodology, results, and recommendations of the acoustical analysis. In addition, the acoustical impacts associated with the 230-kilovolt (kV) switchyard are discussed in this report, with more detail provided in the *Discovery Solar PV and Storage Project 230-kilovolt Switchyard – Construction, Operation, and Decommissioning Noise Results* memo (Tetra Tech 2025), located in Appendix J2 of the Discovery Solar PV and Storage Project Environmental Impact Report (EIR).

2.0 PROJECT DESCRIPTION AND LOCATION

The Project includes development of a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 1,400 megawatts (MW) of renewable electrical energy with up to 8 gigawatt-hours of energy storage capacity (approximately 1,000 MW) on an approximately 7,700-acre Project site in an unincorporated area of southeastern Kern County, California (Figure 1). PV solar panels, a power collection system, including medium-voltage lines that connect the solar facilities, inverters, a switchyard, foundations, and transformers will be installed onsite. Associated Project infrastructure includes an operations and maintenance facility, telecommunication facilities, energy storage system(s), up to three onsite collector substations, interconnection and transmission systems, and temporary laydown yards. The Project may be constructed in multiple phases.

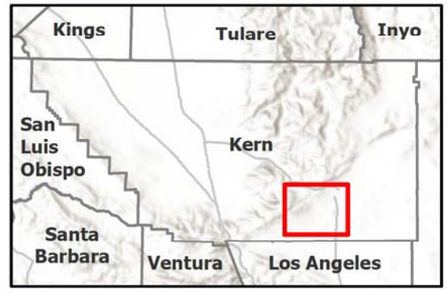
The Project will interconnect to the existing Windhub Substation, which is owned and operated by Southern California Edison (SCE). The interconnect will be via a newly constructed 230-kV generation tie line (gen-tie) that will extend north from the Project site towards the Windhub Substation from on-site collector substations. A portion of the Project 230-kV gen-tie would be co-located within an existing gen-tie corridor (controlled by the Applicant and/or its affiliates). A high-voltage switch yard located immediately north of the Union Pacific Railroad (UPRR) rail line will also be constructed.

The Project is located in an unincorporated area in southeastern Kern County, on generally undeveloped and privately owned land, along the northern edge of the Antelope Valley. The Project site is located approximately 6 miles southwest of the unincorporated community of Mojave, approximately 9 miles southeast of the City of Tehachapi, and approximately 8 miles northwest of the unincorporated community of Rosamond. State Route (SR)-58 is north of the Project site, SR-14 is east of the Project site, and Tehachapi Willow-Springs Road runs between the Project site's boundaries (Figure 1). A network of existing named and unnamed dirt roads traverses the Project site. While the Los Angeles Department of Water and Power (LADWP) aqueduct roughly bisects the Project site, it is not included within the Project site (Figures 2 and 3). On-site, adjacent, and nearby land uses include renewable energy development, rural residential development, livestock grazing, heavy industrial and mining uses, and undeveloped lands. Elevations across the Project site are relatively flat, ranging from approximately 2,970 to 3,760 feet above mean sea level. The Project site is located within the U.S. Geological Survey (USGS) *Monolith, Willow Springs, and Soledad Mountain* 7.5-Minute Topographic Quadrangle Maps.

Discovery Solar PV and Storage Project

Kern County, CA

Figure 1. Regional Overview



Windhub High-voltage Substation (Existing)

Watercourse

Proposed Project Features

Project Site

Gen-tie Line (New)

Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

Step-up HV substation

Gen-tie Corridor

*Already approved under separate projects.

N

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Scale is 1:116,800 when printed at 11"x17"

Not for Construction

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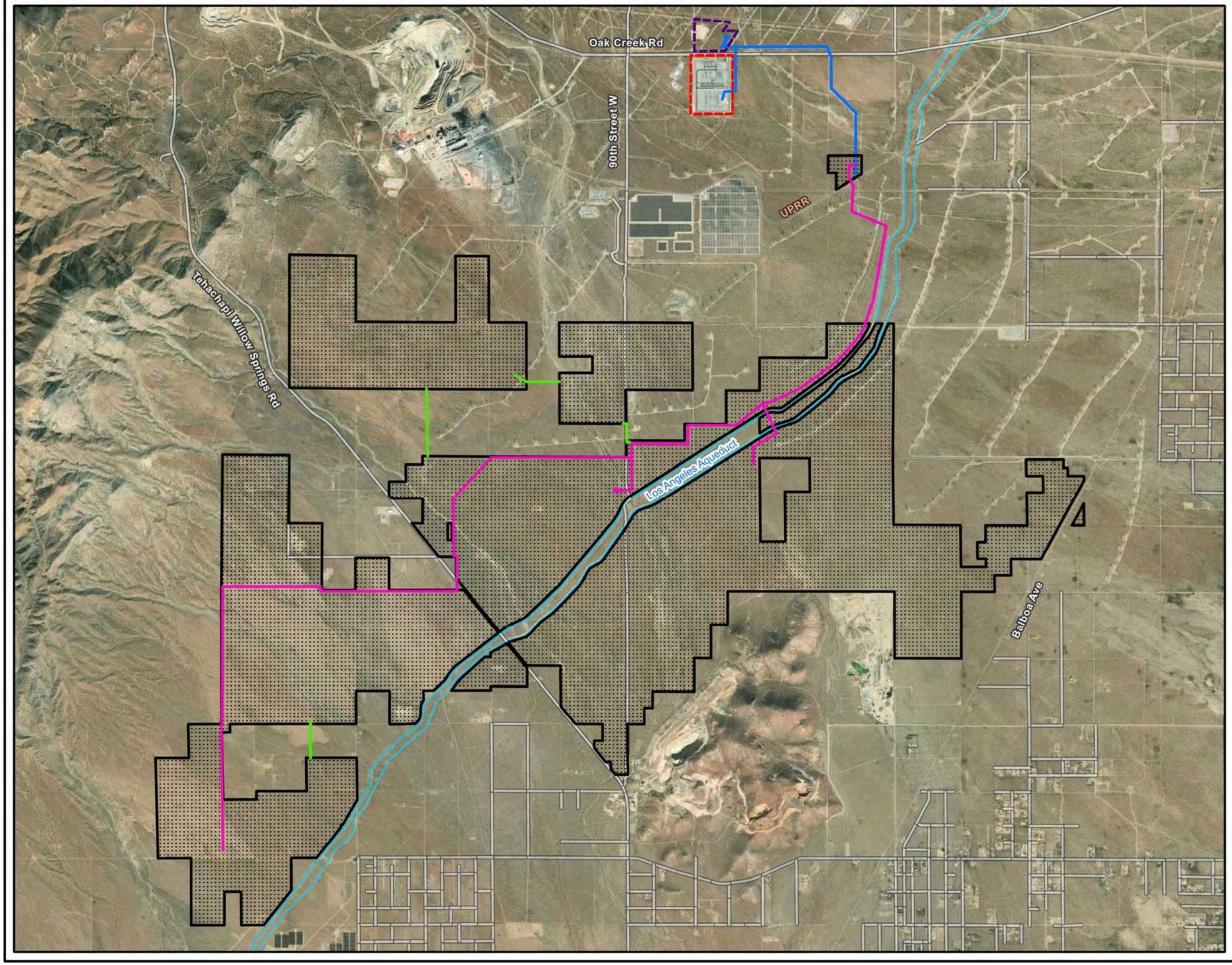
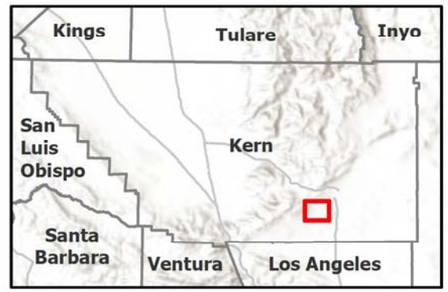
Discovery Solar PV and Storage Project

Kern County, CA

Figure 2. Project Location





Windhub High-voltage Substation (Existing)

Roads

Watercourse

Proposed Project Features

Project Site

Gen-tie Line (New)

Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

Step-up HV substation

Gen-tie Corridor

*Already approved under separate projects.

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Scale is 1:45,000 when printed at 11"x17"

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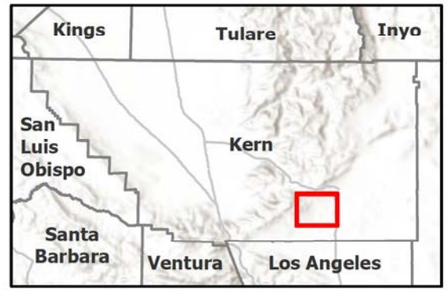
Discovery Solar PV and Storage Project

Kern County, CA

Figure 3. USGS Topographic Map



Windhub High-voltage Substation (Existing)

Proposed Project Features

- Project Site
- Gen-tie Line (New)
- Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

- Step-up HV substation
- Gen-tie Corridor

*Already approved under separate projects.

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0 0.5 1 2 Miles

Scale is 1:75,000 when printed at 11"x17"

Not for Construction

3.0 METHODS

This section describes the methods of the acoustical analysis.

3.1 Background

3.1.1 Project Zoning

The Project site consists of the following zoning districts: A (Exclusive Agriculture), A-1 (Limited Agriculture), Estate (E), and Platted Lands (PL). Many Project parcels also contain one or multiple of the following combining districts: Floodplain (FP), Floodplain Secondary (FPS), Wind Energy (WE), and Residential Suburban (RS). The Project has requested zone changes for parcels currently zoned A-1, E, or PL, such that all Project parcels would be zoned A; no changes to combining zone designations are proposed.

3.1.2 Acoustical Metrics and Terminology

All sounds originate with a source, whether it is a human voice, motor vehicles on a roadway, or a combustion turbine. Energy is required to produce sound and this sound energy is transmitted through the air in the form of sound waves—tiny, quick oscillations of pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear. A sound source is defined by a sound power level (L_W), which is independent of any external factors. By definition, sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts.

A source sound power level cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source outside the acoustic and geometric near-field. A sound pressure level (L_P) is a measure of the sound wave fluctuation at a given receiver location and can be obtained through the use of a microphone or calculated from information about the source sound power level and the surrounding environment. The sound pressure level in decibels (dB) is the logarithm of the ratio of the sound pressure of the source to the reference sound pressure of 20 microPascals (µPa), multiplied by 20. The range of sound pressures that can be detected by a person with normal hearing is very wide, ranging from about 20 µPa for very faint sounds at the threshold of hearing, to nearly 10 million µPa for extremely loud sounds such as a jet during take-off at a distance of 300 feet.

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The L_{eq} has been shown to provide both an effective and uniform method for comparing time-varying sound levels and is widely used in acoustic assessments in the State of California. Community sound levels are also often described in terms of the day-night averaged sound level (L_{dn}), which accounts for the increased potential for annoyance that comes with elevated sound levels at night. In addition, the maximum sound level (L_{max}) can be used to quantify the maximum instantaneous sound pressure level generated by a source and is often used in establishing regulatory noise limits.

Estimates of noise sources and outdoor acoustic environments, and the comparison of relative loudness are presented in Table 1. Table 2 presents additional reference information on terminology used in the report.

Table 1. Sound Pressure Levels and Relative Loudness of Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Textile loom	100	Loud
Newspaper press	95	
Lawnmower at operator's ear	90	
Milling machine (4 feet)	85	
Garbage disposal (3 feet)	80	
Diesel truck, 45 miles per hour (50 meters)	75	Moderate
Vacuum cleaner (10 feet)	70	
Passenger car at 65 miles per hour (25 feet)	65	
Large store air-conditioning unit (20 feet)	60	
Light auto traffic (100 feet)	50	Quiet
Quiet rural residential area with no activity	45	
Bedroom or quiet living room; Bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 feet)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of hearing

Adapted from: Beranek (1988), USEPA (1971), Bies and Hanson (2003:38)

Table 2. Acoustic Terms and Definitions

Term	Definition
Noise	Typically defined as unwanted sound. This word adds the subjective response of humans to the physical phenomenon of sound. It is commonly used when negative effects on people are known to occur.
Sound Pressure Level (L_P)	Pressure fluctuations in a medium. Sound pressure is measured in decibels (dB) referenced to 20 microPascals (µPa), the approximate threshold of human perception to sound at 1,000 hertz.
Sound Power Level (L_W)	The total acoustic power of a noise source measured in dB referenced to picowatts (one trillionth of a watt). Noise specifications are provided by equipment manufacturers as sound power as it is independent of the environment in which it is located. A sound level meter does not directly measure sound power.
Equivalent Sound Level (L_{eq})	The L_{eq} is the continuous equivalent sound level, defined as the single sound pressure level that, if constant over the stated measurement period, would contain the same sound energy as the actual monitored sound that is fluctuating in level over the measurement period.
Day-Night Averaged Sound Level (L_{dn})	The L_{dn} is the average equivalent sound level over a 24-hour period, with a penalty added for noise during the nighttime hours of 8:00 p.m. to 7:00 a.m. During the nighttime period, 10 dB is added to reflect the impact of the noise.
A-Weighted Decibel (dBA)	Environmental sound is typically composed of acoustic energy across all frequencies. To compensate for the auditory frequency response of the human ear, an A-weighting filter is commonly used for describing environmental sound levels. Sound levels that are A-weighted are presented as dBA in this report.
Unweighted Decibels (dBL)	Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL in this report.
Propagation and Attenuation	Propagation is the decrease in amplitude of an acoustic signal due to geometric spreading losses with increased distance from the source. Additional sound attenuation factors include air absorption, terrain effects, sound interaction with the ground, diffraction of sound around objects and topographical features, foliage, and meteorological conditions including wind velocity, temperature, humidity, and atmospheric conditions.

3.1.3 Vibration Metrics and Terminology

Vibration is an oscillatory motion that is described in terms of displacement, velocity, or acceleration. Velocity is the most common descriptor used when evaluating human perception or structural damage. Velocity represents the instantaneous speed of movement and more accurately describes the response of humans, buildings, and equipment to vibrations.

Peak-Particle-Velocity (PPV) and root mean square velocity are typical metrics used to describe vibration levels in units of inches per second in the United States. However, to evaluate annoyance to humans, the vibration dB (VdB) notation is commonly used. The decibel notation acts to compress the range of numbers required to describe vibration. In the United States, the accepted velocity reference for converting to dB is $1x10^{-6}$ inches per second. The abbreviation "VdB" is used for vibration dB to reduce the potential for confusion with sound decibels. Outdoor sources that generate perceptible ground-borne vibrations are typically construction equipment, steel-wheeled trains, and traffic on rough roadways. Table 3 provides common vibration sources as well as human and structural response to ground-borne vibrations.

Table 3. Typical Levels of Ground-Borne Vibration

Human/Structural Response	PPV (in/sec)	Velocity Level (VdB)*	Typical Sources (50 feet from source)
Threshold, Minor Cosmetic Damage, Fragile Buildings	0.4	100	Blasting from Construction Projects
	0.17-0.2	92-94	Heavy Tracked Construction Equipment
Difficulty with Tasks, Such as Reading a Computer Screen	0.125	90	
	0.074	85	Commuter Rail, Upper Range
Residential Annoyance, Infrequent Events	0.04	80	Rapid Transit, Upper Range
	0.013	75	Commuter Rail, Typical
	0.023	72	Bus or Truck Bump Over
Residential Annoyance, Frequent Events	0.013	70	Rapid Transit, Typical
Approximate Threshold of Human Perception	0.007	65	
	0.005	62	Bus or Truck, Typical
	0.0013	50	Typical Background Vibration Levels

*RMS Vibration velocity in VdB reference to 10^{-6} inches/second
PPV – peak particle velocity; RMS – root mean square; VdB – vibration decibel
Source: FTA (2018)

The degree of annoyance cannot always be explained by the magnitude of the vibrations alone. Phenomena, such as ground-borne noise and rattling, visual effects (e.g., movement of hanging objects), and time of day, all influence the response of individuals. The American National Standards Institute (ANSI) and the International Organization for Standardization (ISO) has developed criteria for evaluation of human exposure to vibrations. The recommendations of these standards and other studies evaluating human response to vibrations have been incorporated into the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual (2018). The criteria within this manual are used to assess noise and vibration impacts from transit operations.

3.2 Noise and Vibration Level Requirements and Guidelines

Potential noise impacts associated with the Project were evaluated with respect to the applicable federal guideline, CEQA noise impact thresholds, Kern County General Plan Noise Element, Kern County Zoning Ordinance (Kern County 2021), Kern County Noise Ordinance, and the Soledad Mountain – Elephant Butte Specific Plan (Kern County 1973). Details regarding each set of requirements are provided below.

3.2.1 Federal

3.2.1.1 Noise Control Act of 1972 (42 United States Code 4910)

The Noise Control Act establishes a means for the coordination of federal research and activities in noise control, authorizes the establishment of federal noise emissions standards for products distributed in commerce, and provides information to the public with respect to the noise-emission and noise-reduction characteristics of such products.

3.2.1.2 Occupational Safety and Health Administration Occupational Noise Exposure

The Occupational Safety and Health Administration's (OSHA) Occupational Noise Exposure; Hearing Conservation Amendment (48 [46] *Federal Register* 9738–9785, 1983) stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA. The Hearing Conservation Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.

3.2.1.3 Federal Transit Administration

There is no standardized state or federal regulatory standards developed for assessing construction noise impacts. However, the FTA has developed and published guidelines considered to be reasonable to assess noise impacts from construction operations (FTA 2018). The FTA criteria are summarized in Table 4 below.

Table 4. Federal Transit Authority Construction Noise Criteria

Land Use	8-hour (dBA L_{eq})		30-Day Average L_{dn} (dBA) or L_{eq} (dBA)
	Day	Night	
Residential	80	70	75[1/]
Commercial	85	85	80[2/]
Industrial	90	90	85[2/]

1/ In urban areas with very high ambient noise levels (L_{dn} > 65 dB), L_{dn} from construction operations should not exceed existing ambient + 10 dB.
2/ Twenty-four-hour L_{eq}, not L_{dn}.

In contrast to airborne noise, ground-borne vibration is not an everyday occurrence for humans. The background vibration velocity levels within residential areas are usually 50 VdB or lower, which is well below the human perception threshold of approximately 65 VdB. The FTA's threshold of architectural damage for conventional sensitive structures from ground-borne vibration is measured as 0.2 inch per second PPV or 94 VdB (decibel units of 1 micro inch per second). The FTA measure of human annoyance at residential uses is 72 VdB for "Frequent Events," or fewer than 70 vibration events of the same kind per day.

3.2.2 State

Government Code Section 65302 encourages counties and cities to implement a noise element as part of the general plan. In addition, the California Governor's Office of Planning and Research has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

3.2.2.1 California Environmental Quality Act

CEQA requires that significant environmental impacts be identified and that such impacts be eliminated or mitigated to the extent feasible. Appendix G of the CEQA Statutes and Guidelines (State Clearing House, Office of Planning and Research and the Natural Resources Agency 2023) sets forth a series of suggested thresholds for determining potentially significant noise impacts. Under the thresholds suggested in Appendix G, the proposed Project could be considered to have significant noise and vibration impacts if it results in one or more of the following:

a) Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Generation of excessive groundborne vibration or groundborne noise level?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan had not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

3.2.3 Local

3.2.3.1 Kern County General Plan

The Kern County General Plan includes a Noise Element (Chapter 3) with noise policies to manage sources of noise and protect noise sensitive land uses. Implementation of the General Plan anticipates growth of population, employment, and developed land uses as shown in the Project Description. Expansion of County-wide population, employment, and developed land uses each lead to the expansion of activities that have the potential to generate adverse noise effects.

The major purpose of the Noise Element is to: (1) establish reasonable standards for maximum desired noise levels in Kern County, and (2) develop an implementation program that could effectively deal with the noise problem.

The Noise Element contains the following goals and policies applicable to the Project:

Goals

1) Ensure that residents of Kern County and protected from excessive noise and that moderate levels of noise are maintained.

2) Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

1) Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

2) Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH)

4) Utilize good land use planning principles to reduce conflicts related to noise emissions.

7) Employ the best available methods of noise control.

Implementation Measures

A) Utilize zoning regulation to assist in achieving noise-compatible land use patterns.

F) Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn}

G) At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

- *a) Be the responsibility of the applicant.*
- *b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.*
- *c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.*

I) Noise analysis shall include recommended mitigation, if required, and shall:

- *a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.*
- *b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies and standards of the Noise Element.*
- *c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.*
- *d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.*

J) Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

The Kern County General Plan Energy Element (Chapter 5) also includes the following policy related to noise:

> *10) The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.*

3.2.3.2 Kern County Zoning Ordinance

Chapter 19.80.030(S) in the Kern County Zoning Ordinance (Kern County 2021) states:

> *All non-mobile sources of noise produced by commercial and industrial uses, except for those located within the M-3 District, and located within five hundred (500) feet of property developed residentially and zoned for residential use (E, R-1, R-2 and R-3) shall comply with the following exterior noise standards:*
>
> > *1. The use shall not generate noise that exceeds an average 65 dB L_{dn} (24 hour median) between the hours of 7:00 a.m. and 10:00 p.m. and shall not generate noise that exceeds 65 dB, or which would result in an increase of 5 dB or more from ambient sound levels, whichever is greater, between the hours of 10:00 p.m. and 7:00 a.m.*

3.2.3.3 Kern County Noise Ordinance

Chapter 8.36.020(H) limits the hours of construction related noise and states the following as unlawful:

> *H. Create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:*
>
> > *1.The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.*
> >
> > *2.Emergency work is exempt from this section.*

3.2.3.4 Soledad Mountain – Elephant Butte Specific Plan

The Soledad Mountain – Elephant Butte Specific Plan (Kern County 1973) requires new developments to comply with the Kern County Zoning Ordinance and does not identify additional requirements that would apply to the Project.

3.3 Baseline Ambient Sound Survey

To document the existing conditions, baseline sound level measurements were performed on April 24 and 25, 2024, and on September 15 and 16, 2025. The monitoring locations (MLs) were selected to be representative of the surroundings of potential receptors relative to the proposed Project site. The ambient sound survey included short-term measurements in the presence of a field engineer for a minimum duration of 30 minutes. The short-term measurements were made during both daytime

(7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) periods at noise-sensitive areas (NSAs).

All measurements were conducted using a Larson Davis Model 831 precision integrating sound-level meter that meets the requirements of ANSI Standards for Type 1 precision instrumentation. This sound analyzer has an operating range of 5 dB to 140 dB, and an overall frequency range of 8 to 20,000 hertz (Hz). During the measurement program, microphones were fitted with a windscreen, set upon a tripod at a height of approximately 1.5 meters (5 feet) above the ground and located out of the influence of any vertical reflecting surfaces. The sound analyzer was calibrated at the beginning and end of the measurement period using a Larson Davis Model CAL200 acoustic calibrator following procedures that are traceable to the National Institute of Standards and Technology. Table 5 lists the measurement equipment employed during the survey. The sound level meters were programmed to sample and store A-weighted and octave band sound level data, including L_{eq} and the percentile sound levels.

Table 5. Ambient Survey Measurement Equipment

Description	Manufacturer	Type
Signal Analyzer	Larson Davis	831
Preamplifier	Larson Davis	PRM902
Microphone	PCB	377B02
Windscreen	ACO Pacific	7-inch
Calibrator	Larson Davis	CAL200

During the survey, weather conditions were conducive to accurate data collection. Weather conditions were mainly sunny with few clouds and no precipitation occurring during the measurement period. Temperatures ranged from 74-86 degrees Fahrenheit during the day, to 52-64 degrees Fahrenheit during the nighttime.

3.4 Noise-Sensitive Areas

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. These locations are referred to as NSAs. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate also are NSAs. Commercial and industrial uses are considered the least noise sensitive. Figure 4 shows the NSAs within 0.5 mile of the Project site that have been included in this analysis and their representative ambient noise monitoring locations. The representative ambient noise level for each NSA is summarized below in Table 6.

Table 6. Summary of NSAs

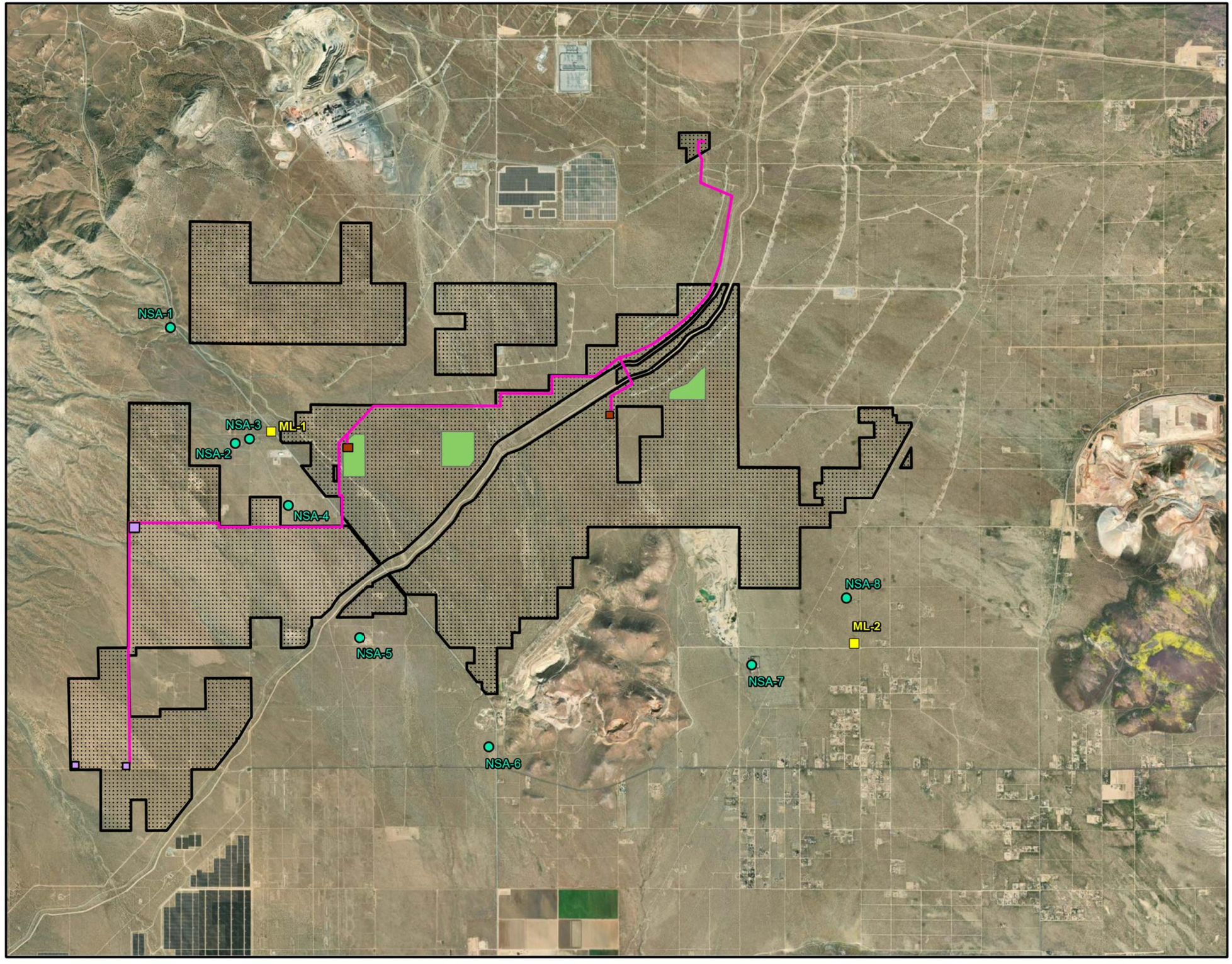
NSA	Land Use	UTM Coordinates (meters)		Distance to Project Site Boundary (feet)	Representative Ambient Noise Monitoring Location	Representative Ambient Noise Level (dBA)		
		Easting	Northing			Day, L_{eq}	Night, L_{eq}	L_{dn}
NSA-1	Recreational/Trail	377808	3874253	703	ML-1	66	61	69
NSA-2	Single-family residential near Tehachapi Willow Springs Road	378656	3872706	1,216	ML-1	66	61	69
NSA-3	Single-family residential near Tehachapi Willow Springs Road	378846	3872763	1,208	ML-1	66	61	69
NSA-4	Single-family residential near Tehachapi Willow Springs Road	379354	3871868	491	ML-1	66	61	69
NSA-5	Single-family residential near Tehachapi Willow Springs Road	380286	3870098	999	ML-1	66	61	69
NSA-6	Single-family residential near Tehachapi Willow Springs Road	381990	3868628	2,554	ML-1	66	61	69
NSA-7	Single-family residential to the southeast of the Project	385500	3869687	3,443	ML-2	46	23	44
NSA-8	Single-family residential to the southeast of the Project	386770	3870566	2,232	ML-2	46	23	44

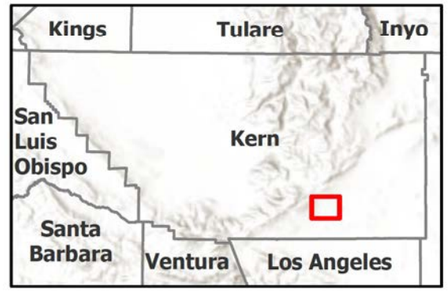
dBA – A-weighted decibel; L_{eq} – equivalent sound level; L_{dn} – day-night averaged sound level; ML – monitoring location; NSA – noise-sensitive area; UTM – Universal Transverse Mercator

Discovery Solar PV and Storage Project

Kern County, CA

Figure 4. Noise Sensitive Areas and Monitoring Locations





- Noise Monitoring Location
- Noise Sensitive Area (NSA)

Proposed Project Features

- Project Site
- Substation
- Substation Alternative
- BESS Area
- Gen-tie Line (New)

N

0 0.25 0.5 1 Miles

Scale is 1:50,000 when printed at 11"x17"

Not for Construction

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3.5 Construction Noise Methods

3.5.1 Noise Calculation Methodology

Acoustic emission levels for activities associated with Project construction were based upon typical ranges of energy equivalent noise levels at construction sites, as documented in the FTA (2018) Noise and Vibration Manual.

As construction equipment will be spread throughout the Project site, the basic construction model assumed spherical wave divergence from a point source located at the centroid of the nearest buildable area to each receptor structure. Figure 5 shows the locations of these centroids. In addition to this, the noise impacts from the worst-case construction stage, identified as stage 4 of system installation, were calculated from the closest inverter skid location to each receptor.

Furthermore, the model conservatively assumed that all pieces of construction equipment associated with an activity would operate simultaneously for the duration of that activity. An additional level of conservatism was built into the construction noise model by excluding potential shielding effects due to intervening structures and buildings along the propagation path from the site to receiver locations such as residential buildings.

3.5.2 Vibration Calculation Methodology

Vibration levels for activities associated with Project construction were based on the average of source levels in PPV published with the FTA (2018) Noise and Vibration Manual, which documents several types of construction equipment measured under a wide variety of construction activities. Using the documented vibration levels as input into a basic propagation model, construction vibration levels were calculated at the nearest Project site boundary and then at the NSA structure.

Discovery Solar PV and Storage Project

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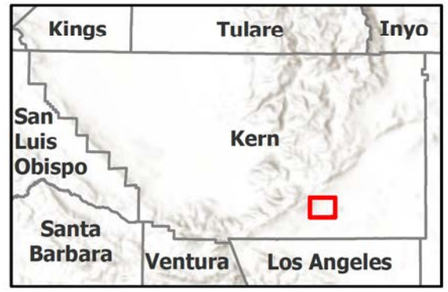
Figure 5. Construction Centroids



Construction Centroid

Proposed Project Features

Project Buildable Area

N

Miles

0 0.25 0.5 1

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Not for Construction

3.6 Operational Noise

This section describes the model utilized for the assessment; input assumptions used to calculate noise levels due to the Project's normal operation; and the results of the noise impact analysis.

3.6.1 Noise Prediction Model

The CadnaA (Computer Aided Noise Analysis) computer noise model was used to calculate sound pressure levels from the operation of the Project equipment in the vicinity of the Project site. An industry standard, CadnaA was developed by DataKustik GmbH to provide an estimate of sound levels at distances from sources of known emission. It is used by acousticians and acoustic engineers due to the capability to accurately describe noise emission and propagation from complex facilities consisting of various equipment types like the Project and in most cases, yields conservative results of operational noise levels in the surrounding community.

The ISO standard for outdoor sound propagation, ISO 9613 Part 2 – "Attenuation of Sound during Propagation Outdoors," was used within CadnaA (ISO 1996). The method described in this standard calculates sound attenuation under weather conditions that are favorable for sound propagation, such as for downwind propagation or atmospheric inversion, conditions which are typically considered worst-case. The calculation of sound propagation from source to receiver locations consists of full octave band sound frequency algorithms, which incorporate the following physical effects:

- Geometric spreading wave divergence;
- Atmospheric absorption at 10 degrees Celsius and 70 percent relative humidity;
- Screening by site specific topography and obstacles;
- The effects of terrain features including relative elevations of noise sources;
- Sound power levels from stationary sources;
- The locations of noise-sensitive land use types;
- Intervening objects including stationary equipment, to the extent included in the design;
- Ground effects due to areas of pavement and unpaved ground;
- Sound power at multiple frequencies;
- Multiple noise sources and source type (point, area, and/or line); and
- Averaging predicted sound levels over a given time.

CadnaA allows for three basic types of sound sources to be introduced into the model: point, line, and area sources. Each noise-radiating element was modeled based on its noise emission pattern. Larger dimensional sources such as the transformers were modeled as area sources, while the gen-tie was modeled as a line source.

Off-site topography was obtained using the publicly available USGS digital elevation data. A default ground attenuation factor of 0.5 was assumed for off-site sound propagation over acoustically "mixed" ground.

3.6.2 Input to the Noise Prediction Model

The Project's general arrangement was reviewed and directly imported into the acoustic model so that on-site equipment could be easily identified, buildings and structures could be added, and sound emission data could be assigned to sources as appropriate. Figure 6 shows the approximate location of Project equipment.

The primary noise sources during operations are the inverter skids, the 230-kVA substation transformers, and the battery energy storage system (BESS) units. It is anticipated that the Project will include up to three onsite collector substations; however, the westernmost collector substation would be in one of three alternate locations. All onsite collector substation locations, except the most southwestern alternative, were modeled to conservatively analyze operational noise. The most southwestern alternative substation is located the furthest away from sensitive receptors, and as such, if this location is selected, the noise impacts will be less than the other two modeled alternative locations. It is expected that all equipment will operate in a consistent manner during daylight hours. Between sunset and sunrise, all equipment will remain operational except for the inverters. Reference sound power levels input to CadnaA were provided by the Applicant and equipment manufacturers. The sound levels used in the noise model are shown below in Table 7.

Table 7. Modeled Sound Power Level (L_w) for Major Pieces of Project Equipment

Sound Source	Sound Power Level (L_w) by Octave Band Frequency, Hz, dBA									Broadband Level, dBA
	31.5	63	125	250	500	1k	2k	4k	8k	
Inverter Skid	59	73	83	89	90	92	93	88	79	98
Substation Transformer	65	85	97	99	105	102	98	93	84	108
BESS Unit	--	59	63	81	84	86	82	76	65	90

BESS – battery energy storage system; dBA – A-weighted decibel; L_w – sound power

From the proposed easternmost substation, a 230-kV gen-tie would be constructed to connect the Project to its point of interconnection. The Electric Power Research Institute has conducted several studies of corona effects (EPRI 1978, 1987). The typical noise levels for transmission lines with wet conductors are shown in Table 8. It can be assumed that the proposed 230-kV gen-tie will produce a sound level of 40 dBA directly under the conductors during worst-case wet conditions.

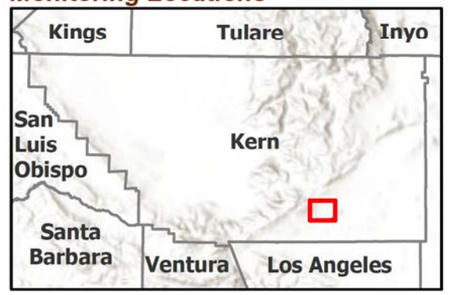
Table 8. Transmission and Sub-transmission Line Voltage and Audible Noise Levels

Line Voltage (kilovolts)	Audible Noise Level Directly Below the Conductor (A-weighed decibels)
138	34
240	40
360	51

Discovery Solar PV and Storage Project

Kern County, CA

Figure 6. Noise Sensitive Areas and Monitoring Locations



NSA-1
NSA-2
NSA-3
NSA-4
NSA-5
NSA-6
NSA-7
NSA-8

- Noise Sensitive Area (NSA)

Proposed Project Features

- Project Site
- Substation
- Substation Alternative
- BESS Area
- Inverter Skids
- Gen-tie Line (New)

N

0 0.25 0.5 1 Miles

Scale is 1:45,000 when printed at 11"x17"

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4.0 RESULTS

4.1 Field Measurement Results

Three short-term, attended sound measurements were performed at public locations near residential properties proximate to the Project site. The monitoring locations were selected to represent ambient conditions at land uses in the vicinity of the Project site. The locations and results of the short-term monitoring are described in Table 9 and mapped on Figure 4. The most significant sources of noise in the vicinity of the Project are other adjacent industrial land uses including mining operations and existing solar and wind turbine operations, as well as noise from nearby roads. Aircraft using the Edwards Air Force Base also contribute to intermittent noise levels. Noise is also generated on individual parcels whether industrial, recreational, or residential.

Table 9. Ambient Survey Measurement Results

Monitoring Location	Coordinates (Universal Transverse Mercator Zone 11)		Time Period	L_{eq} (dBA)	L_{dn} (dBA)
	Easting (meters)	Northing (meters)			
ML-1	379117	3872832	Day	66	69
			Night	61	
ML-2	386878	3869886	Day	46	44
			Night	23	

dBA – A-weighted decibels; L_{eq} – equivalent noise level; L_{dn} – day-night averaged sound level; ML – monitoring location

4.2 Construction Noise

4.2.1 Projected Noise Levels During Construction

Construction of the Project is expected to occur over an approximately 34-month period, commencing in Q4-2025, following receipt of all permits and agency approvals. Construction activities for the Project generally fall into three main phases: site preparation; system installation; and testing, commissioning, and cleanup.

Table 10 summarizes the proposed equipment to be used for each stage and the associated noise level of the equipment. Table 11 summarizes the received construction noise levels at each NSA, while Table 12 summarizes the construction levels associated with the worst-case construction stage occurring at the nearest inverter skid to each NSA.

Table 10. Summary of Proposed Construction Equipment

Construction Category	Stage	Activity	Equipment			
			Equipment Type	Quantity	Usage Factor (%)	USEPA Construction Noise Level (50 feet), dBA L_{max}
General Overhead	0	Site Transportation (34 months)	DOT Truck/Car	68	40	55
Site Preparation/Grading	1		Skid Steer Loaders	6	40	80
			Pickup Trucks	6	40	55

Construction Category	Stage	Activity	Equipment			
			Equipment Type	Quantity	Usage Factor (%)	USEPA Construction Noise Level (50 feet), dBA L_{max}
Site Preparation/Grading (cont.)		Perimeter Fence Installation (6 months)	Water Trucks	2	50	85
			Flatbed Trucks	2	40	84
	2	Site Preparation, Clearing/Grading, and Roads (15 months)	Water Trucks	6	50	85
			Graders	3	40	85
			Bulldozers	3	40	85
			Rollers	6	20	85
			Tractors	2	40	84
			Pickup Trucks	6	40	55
	3	Underground Work (Trenching) (15 months)	Excavators	3	40	85
			Water Trucks	6	50	85
			Aussie Padders	2	50	84
			Rollers	2	20	85
			Forklifts	3	40	80
			Tractor	4	40	84
			Pickup Trucks	4	40	55
System Installation	4	System Installation (24 months)[1/]	Forklifts	12	40	80
			Skid Steer Loaders	18	40	80
			Tractors	6	40	84
			ATVs	40	40	55
			Pile Drivers	16	20	95
			Pickup Trucks	12	40	55
			Generators	8	50	82
			School Bus	11	40	84
	5	Gen-tie Construction (6 months)	Line Truck	1	40	80
			Boom Truck	1	40	80
			Crane	1	16	85
			Pickup Trucks	8	40	55
	6	Energy Storage System (4-6 months)	Crane	1	16	85
			Grader	1	50	85
			Lift	1	40	80
			Skid Steer Loaders	2	40	80
Testing, Commissioning, and Cleanup	7	Testing and Commissioning (22 months)	Pickup Trucks	10	40	55
	8	Site Cleanup, Reclamation, and Restoration (4 months)	Graders	3	40	85
			Skid Loaders	3	40	80
			Drill Seed Drums	2	40	84
			Broadcast Seed Belts	2	40	84
			Water Trucks	4	50	85

dBA – A-weighted decibels; L_{max} – maximum sound level; USEPA – U.S. Environmental Protection Agency
1/ Identified as worst-case construction stage

Table 11. Summary of Construction Noise Levels at NSAs

NSA	UTM Coordinates (meters)		Distance to Construction Centroid (feet)	Construction Noise Level per Stage (dBA, L_{eq})								
	Easting	Northing		0	1	2	3	4	5	6	7	8
NSA-1	377808	3874253	2,920	34	53	58	58	66	51	49	25	56
NSA-2	378656	3872706	3,700	32	51	56	56	64	49	48	24	54
NSA-3	378846	3872763	3,075	34	53	58	58	66	51	49	25	56
NSA-4	379354	3871868	2,800	34	54	59	59	66	52	50	26	57
NSA-5	380286	3870098	1,500	40	59	64	64	72	57	56	31	62
NSA-6	381990	3868628	7,425	26	45	50	50	58	43	42	18	48
NSA-7	385500	3869687	8,200	25	44	49	49	57	42	41	17	48
NSA-8	386770	3870566	7,050	26	46	51	50	58	44	42	18	49

dBA – A-weighted decibels; L_{eq} – equivalent sound level; NSA – noise-sensitive area; UTM – Universal Transverse Mercator

Table 12. Summary of Worst-case Construction Stage Noise Levels at NSAs

NSA	UTM Coordinates (meters)		Distance to Closest Inverter Skid (feet)	Construction Noise Level (dBA, L_{eq})
	Easting	Northing		
NSA-1	377808	3874253	1,250	73
NSA-2	378656	3872706	1,900	70
NSA-3	378846	3872763	2,475	67
NSA-4	379354	3871868	975	76
NSA-5	380286	3870098	1,600	71
NSA-6	381990	3868628	3,100	66
NSA-7	385500	3869687	4,275	63
NSA-8	386770	3870566	2,975	66

dBA – A-weighted decibels; L_{eq} – equivalent sound level; NSA – noise-sensitive area; UTM – Universal Transverse Mercator

Noise levels resulting from construction activities would vary depending on several factors such as the type and age of equipment, specific equipment manufacture and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers. Construction would primarily occur during daylight hours, Monday through Friday, between 6:00 a.m. and 6:00 p.m.; however, some work may occur on Saturday and Sunday, as required, to meet the construction schedule and/or to promote the health and safety of workers. The Kern County Noise Ordinance (Chapter 8.36) limits noise from construction from 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. to 8:00 a.m. on weekends when occurring within 1,000 feet of an occupied residential dwelling. Project construction work would conform to the County's ordinance. Any construction activities that may need extended hours would be coordinated with the County and appropriate agencies before the activity occurs.

The FTA has published construction noise impact criteria levels of an 80 dBA 8-hour L_{eq} during the day for residential land uses. Table 11 shows that the highest general construction noise level at a receptor will be 72 dBA L_{eq} at NSA-5, which will occur during Stage 4 construction activities. Furthermore, Table 12 shows that the highest worst-case construction noise level at a receptor will be 76 dBA L_{eq} at NSA-4. However, this worst-case noise level is unrealistic as the equipment identified in

Table 10 for the system installation stage (16 pile drivers, 18 loaders, etc.) would never all be working on a single inverter skid at once. Regardless, the noise levels for both the general construction and worst-case construction stage are below the FTA guidance level of 80 dBA L_{eq}; therefore, construction of the Project will comply with the Kern County Noise Ordinance and FTA construction noise guidelines.

In addition, the construction noise impacts associated with the Project's 230-kV switchyard have been assessed in Tetra Tech (2025), in Appendix J2 of the EIR, and are shown to comply with all applicable limits. Due to this, the temporary increase in noise due to switchyard construction is considered to be a less than significant impact.

4.2.2 Construction Traffic Noise

Using the peak vehicle counts from the Traffic Impact Analysis and the FTA methodology for calculating the roadway hourly L_{eq} at 50 feet, the 2026 cumulative condition peak hour traffic L_{eq} will range from 63 dBA to 64 dBA at 50 feet from Tehachapi Willow Springs Road and will range from 60 dBA to 64 dBA at 50 feet from Backus Road. The 2026 cumulative plus peak construction peak hour traffic L_{eq} will range from 66 dBA to 68 dBA at 50 feet from Tehachapi Willow Springs Road and will range from 64 dBA to 67 dBA at 50 feet from Backus Road.

Construction would primarily occur during daylight hours, Monday through Friday, between 6:00 a.m. and 6:00 p.m.; however, some work may occur on Saturday and Sunday, as required, to meet the construction schedule and/or to promote the health and safety of workers. The Kern County Noise Ordinance (Chapter 8.36) limits noise from construction from 9:00 p.m. to 6:00 a.m. on weekdays and 9:00 p.m. to 8:00 a.m. on weekends when occurring within 1,000 feet of an occupied residential dwelling. Project construction work would conform to the County's ordinance. Any construction activities that may need extended hours would be coordinated with the County and appropriate agencies before the activity occurs.

The noise levels associated with the addition of construction traffic are below the FTA guidance level of 80 dBA L_{eq}; therefore, noise associated with construction traffic will comply with the Kern County Noise Ordinance and FTA construction noise guidelines.

4.2.3 Projected Vibration Levels During Construction

This vibration analysis evaluated the worst-case vibration source, which would be the pile driver. Based on vibration propagation calculations, the highest construction vibration levels are predicted to be 0.003 PPV inch per second (in/sec), or 56 VdB, at an NSA (NSA-4), which is approximately 975 feet from the nearest source of construction. These levels are based on the worst-case vibration producing equipment and it is expected that other vibration generating equipment proposed for the Project construction would result in lower vibration levels. The highest vibration levels received by an NSA will be below the human perception threshold level for frequent event of 65 VdB and the threshold for sensitive structures at 94 VdB.

In addition, the vibratory impacts associated with the Project's 230-kV switchyard have been assessed in Tetra Tech (2025; Appendix J2 of the EIR) and shown to comply with all applicable limits. Due to this, the vibration associated with switchyard construction and operation is considered to be a less than significant impact.

4.3 Operational Noise

Broadband (dBA) sound pressure levels were calculated for expected normal Project operation assuming that all components identified previously are operating continuously and concurrently at the representative manufacturer-rated sound. The sound energy was then summed to determine the equivalent continuous A-weighted downwind sound pressure level at a point of reception. Sound contour plots displaying broadband (dBA, L_{dn}) sound levels presented as color-coded isopleths are provided in Figure 7. The sound contours are graphical representations of the cumulative noise associated with operation of the equipment over a 24-hour period and show how operational noise would be distributed over the surrounding area of the Project site. The contour lines shown are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

Table 13 shows the projected exterior sound levels at each NSA. Because nighttime is defined as occurring between 10:00 p.m. and 7:00 a.m., there will be a period of time during the early morning in which the sun has risen and all equipment is operational, including the inverters, but is still considered nighttime. Full equipment operations during these early morning "nighttime" hours were also accounted for in the L_{dn} calculations.

Table 13. Operational Acoustic Modeling Results, dBA

NSA	UTM Coordinates (meters)		Modeled Operational L_{max}, dBA	Modeled Operational Nighttime L_{eq}, dBA	Modeled Operational L_{dn}, dBA	Ambient L_{dn}, dBA	Modeled Operational + Ambient L_{dn}, dBA	Increase Above Ambient, dBA
	Easting	Northing						
NSA-1	377808	3874253	41	37	44	69	69	<1
NSA-2	378846	3872763	47	44	51	69	69	<1
NSA-3	379354	3871868	47	45	52	69	69	<1
NSA-4	381990	3868628	51	46	54	69	69	<1
NSA-5	386770	3870566	46	4048	69	69	<1	
NSA-6	378656	3872706	38	33	41	69	69	<1
NSA-7	378846	3872763	36	32	39	44	45	1
NSA-8	379354	3871868	39	34	41	44	46	2

dBA – A-weighted decibels; L_{dn} – day-night averaged sound level; L_{eq} – equivalent sound level; L_{max} – maximum sound level; NSA – noise-sensitive area; UTM – Universal Transverse Mercator

The results indicate that the highest Project operational noise levels will be 51 dBA L_{max} and 54 dBA L_{dn} at NSA-4. These levels show that the Project will comply with the Kern County General Plan Noise Element 65 dBA L_{dn} exterior limit and the Kern County Zoning Ordinance 65 dBA L_{dn}. These levels would also comply with the Kern County Zoning Ordinance 65 dBA L_{max} limit between the hours of 10:00 p.m. and 7:00 a.m. Regarding the Kern County General Plan Noise Element 45 dBA L_{dn} interior limit, typical residential construction provides approximately 15 to 20 dB of additional noise reduction with windows closed and approximately 10 dB of additional noise reduction with windows in an open

position (Harris 1998). Thus, the highest exterior Project operational noise level of 54 dBA L_{dn} would be reduced to 44 dBA L_{dn} at the interior with windows open and will comply with the Kern County General Plan Noise Element 45 dBA L_{dn} interior limit.

In addition, the operational noise impacts associated with the Project's 230-kV switchyard have been assessed in Tetra Tech (2025; Appendix J2 of the EIR) and are shown to comply with all applicable limits. Due to this, the long-term operational noise associated with switchyard operation is considered to be a less than significant impact.

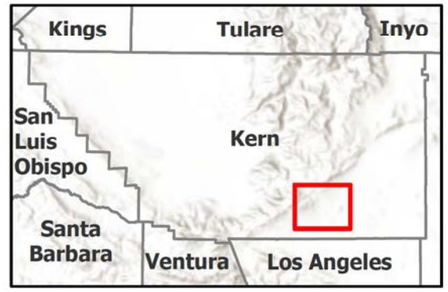
4.3.1 Operational Traffic Noise

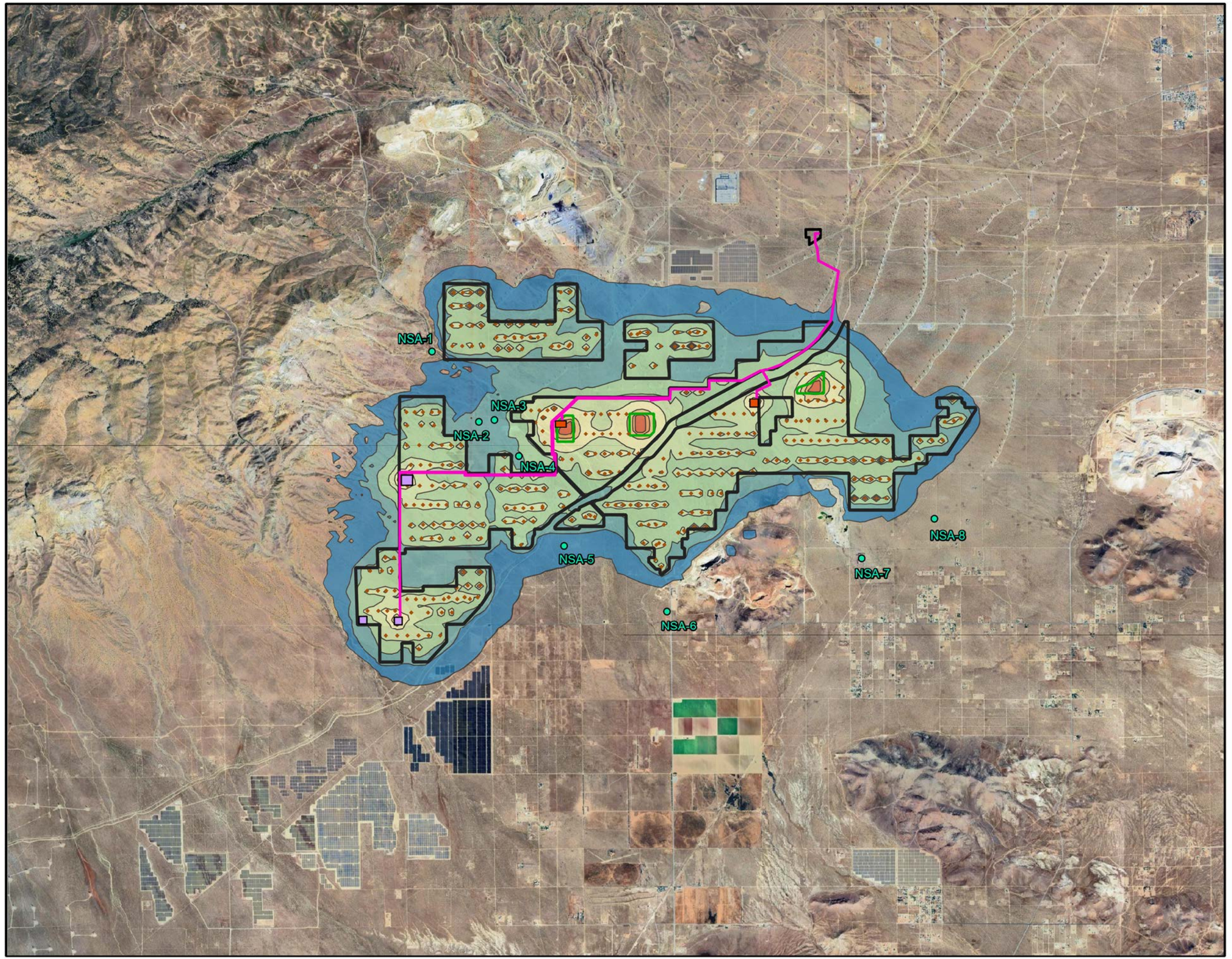
Project operations are expected to produce a peak hour of six vehicle trips. These trips would result in an hourly L_{eq} of 47 dBA at 50 feet. This is at least 10 dB lower than any noise level associated with the 2026 cumulative condition peak hour traffic for both Willow Springs Road and Backus Road. Therefore, traffic from the Project would not increase the cumulative traffic noise level.

Discovery Solar PV and Storage Project

Kern County, CA

Figure 7. Received Sound Levels, Project Operation





Noise Sensitive Area (NSA)

Proposed Project Features

- Project Site
- Inverter Skids
- Substation
- Substation Alternative
- BESS Area
- Gen-tie Line (New)

Received Sound Levels (dBA Ldn)

- 45.0-50.0
- 50.0-55.0
- 55.0-60.0
- 60.0-65.0
- 65.0-70.0
- 70.0-75.0
- 75.0-80.0
- 80.0-85.0

N

0 0.75 1.5 3 Miles

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5.0 DISCUSSION AND RECOMMENDATIONS

Project construction would occur between 6:00 a.m. and 6:00 p.m., in compliance with the Kern County Noise Ordinance and is exempt from noise regulations during this time. Using conservative noise calculations, the highest construction noise levels at a receptor will be 76 dBA L_{eq} at NSA-4. This level is below the FTA guidance level of 80 dBA L_{eq}.

During Project construction, the worst-case vibration source would be from pile driving. Based on vibration propagation calculations, construction vibration levels are predicted to be 0.003 PPV in/sec, or 56 VdB, at the nearest residential receptor to construction activities, NSA-4. Vibration levels at the nearest sensitive receptor will be below the impact threshold level for human perception of 65 VdB, human annoyance of 74 VdB, and sensitive structures of 94 VdB.

During Project operation, it is expected that all equipment will operate in a consistent manner during daylight hours. Between sunset and sunrise, all equipment will remain operational except for the inverters. The results indicate that the highest Project operational noise levels will be 51 dBA L_{eq} and 54 dBA L_{dn} at NSA-4. These levels show that the Project will comply with the Kern County General Plan Noise Element 65 dBA L_{dn} exterior limit and the Kern County Zoning Ordinance 65 dBA L_{dn}. These levels would also comply with the Kern County Zoning Ordinance 65 dBA L_{max} limit between the hours of 10:00 p.m. and 7:00 a.m. As discussed in Section 4.2, the highest interior noise level is 44 dBA L_{dn} at NSA-4, which complies with the Kern County General Plan Noise Element 45 dBA L_{dn} interior limit.

Noise levels from decommissioning would be similar to those during construction. The same types of heavy equipment and vehicles would be used to decommission the site as were used to construct it. Decommissioning activities, like construction, would comply with County construction noise ordinance standards as detailed previously.

In conclusion, Project construction and operations are not anticipated to exceed County noise standards; therefore, no mitigation measures are recommended.

5.1 Best Management Practices

As shown in Sections 4.2 and 4.3, the noise generated from the construction and operation of the Project would meet regulatory compliance. Since construction machines operate intermittently, and the types of machines in use at the Project site change with the stage of construction, noise emitted during construction would be mobile and variable. Therefore, to help minimize Project noise emissions, the following best management practices are recommended:

> **MM-1:** The following measures are recommended to further minimize short-term noise levels associated with Project construction and decommissioning:
>
> a) Construction and decommissioning activities at the Project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the Kern County Noise Ordinance, Chapter 8.36. Construction activities would generally be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends, if the construction site is within 1,000 feet of an occupied residential dwelling. These hourly limitations shall not apply to activities

where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.

b) Stage equipment in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the Project site during construction to the extent practical. Place stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the Project site, where feasible.

c) Ensure construction equipment is fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer.

d) Limit haul trucks from idling for periods greater than 5 minutes, except as needed to perform a specified function (e.g., concrete mixing).

e) Limit onsite vehicle speeds to 15 miles per hour, or less (except in cases of emergency).

f) Adjust back-up beepers for construction equipment to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, employ alternative safety measures such as escorts and spotters.

MM-2: Prior to the issuance of grading permits, the construction contractor establish a Noise Disturbance Coordinator for the Project during construction. The Noise Disturbance Coordinator is responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator determines the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities.

MM-3: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:

a) The mailing notice shall be to all residences within 1,000 feet of the Project site, 15 days or less prior to construction activities. The notices shall include the construction schedule and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.

b) A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction site, or adjacent to the nearest public access to the main construction entrance, throughout construction activities that shall provide the construction

schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator.

c) Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.

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Appendix J2

Discovery Solar PV and Storage Project 230-kilovolt Switchyard – Construction, Operation, and Decommissioning Noise Results

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TETRA TECH

Memo

To: Discovery Solar PV and Storage, LLC

From: Tetra Tech, Inc.

Date: October 30, 2025

Subject: Discovery Solar PV and Storage Project 230-kilovolt Switchyard – Construction, Operation, and Decommissioning Noise Results

Discovery Solar PV and Storage, LLC is proposing to build the Discovery Solar PV and Storage Project (Project), a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 1,400 megawatts (MW) of renewable electrical energy with up to 8 gigawatt-hours of energy storage capacity (approximately 1,000 MW) on an approximately 7,700-acre Project site in an unincorporated area of southeastern Kern County, California. Noise associated with the construction, operation, and decommissioning of the Project has been assessed in the Acoustical Analysis Report for the Discovery Solar PV and Storage Project prepared by Tetra Tech, Inc. (Tetra Tech 2025), located in Appendix J1 of the Discovery Solar PV and Storage Project Environmental Impact Report.

To connect the Project to the grid, a new, 230-kilovolt (kV) generation tie (gen-tie) line extending from an onsite collector substation located south of the Los Angeles Department of Water and Power (LADWP) aqueduct would head north and cross the LADWP aqueduct and then combine with stepped-up generation from the collector substation north of the LADWP via either a switchyard or direct connection. From there, the two circuits would be combined into a double circuit that would run north to a new 230-kV switchyard to connect and/or route the Project gen-tie circuits into the previously constructed gen-tie corridor (approved as part of the Sanborn Solar Project) north and then west towards Southern California Edison's Windhub Substation. This switching area would consist of 230-kV breakers, poles and structures, disconnect switches, bus work, a control shelter, and other high-voltage equipment. The switchyard would be approximately 250 feet wide by 250 feet long in area and pole heights associated with the switchyard would be less than 250 feet tall. A 230-kV transmission line may also be constructed from the westernmost onsite collector substation through the Project site, joining with the previously described gen-tie lines before continuing north.

This technical memo describes relevant acoustic concepts and terminology, and potential noise impacts associated with construction and operation of the 230-kV switchyard.

ACOUSTIC CONCEPTS AND TERMINOLOGY

Airborne sound is described as a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Sound energy is characterized by the properties of sound waves, which include frequency, wavelength, amplitude, and velocity. A sound source is defined by a sound power level (L_W), which is independent of any external factors. By definition, sound power is the rate at which acoustical

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energy is radiated outward and is expressed in units of watts (W). Sound energy propagates through a medium where it is sensed and then interpreted by a receiver. A sound pressure level (L_P) is a measure of this fluctuation at a given receiver location and can be obtained through the use of a microphone or calculated from information about the source L_W and the surrounding environment. Sound power, however, cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source.

While the concept of sound is defined by the laws of physics, the term "noise" has further qualities of being excessive or loud. The perception of sound as noise is influenced by several technical factors such as loudness, sound quality, tonality, duration, and the existing background levels. Sound levels are presented on a logarithmic scale to account for the large range of acoustic pressures that the human ear is exposed to and is expressed in units of decibels (dB). A decibel is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing defined as 20 micropascals. Conversely, sound power is referenced to one picowatt.

Broadband sound includes sound energy summed across the frequency spectrum. In addition to broadband sound pressure, analysis of the various frequency components of the sound spectrum is completed to determine tonal characteristics. The unit of frequency is hertz (Hz), measuring the cycles per second of the sound pressure waves and typically the frequency analysis examines nine octave bands from 32 Hz to 8,000 Hz. Since the human ear does not perceive individual frequencies with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system, and sound exposure in acoustic assessments is designated in A-weighted decibels (dBA). Unweighted sound levels are referred to as linear. Linear decibels (dBL) are used to determine a sound's tonality and to engineer solutions to reduce or control sound as techniques are different for low and high frequency noise. Typical sound pressure levels associated with various activities and environments are presented in Table 1.

Table 1. Sound Pressure Levels (L_P) of Typical In-Air Sound Sources and Acoustic Environments

Sound Source or Activity	Sound Level (dBA)	Subjective Impression
Loud rock concert near stage Jet takeoff (200 feet [ft])	120	Uncomfortably loud
Float plane takeoff (100 ft)	110	
Jet takeoff (2,000 ft)	100	Very loud
Heavy truck or motorcycle (25 ft)	90	
Garbage disposal Food blender (2 ft) Pneumatic drill (50 ft)	80	Loud
Vacuum cleaner (10 ft)	70	Moderate
Passenger car at 65 miles per hour (25 ft)	65	
Large store air-conditioning unit (20 ft)	60	
Light auto traffic (100 ft)	50	Quiet
Quiet rural residential area with no activity	45	

Table 1. Sound Pressure Levels (L_P) of Typical In-Air Sound Sources and Acoustic Environments

Sound Source or Activity	Sound Level (dBA)	Subjective Impression
Bedroom or quiet living room Bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 ft)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of hearing

dBA – A-weighted decibels

An inherent property of the logarithmic decibel scale is that the sound pressure levels of two separate sources are not directly additive. For example, if a sound of 50 dBA is added to another sound of 50 dBA, the result is a 3-decibel increase (or 53 dBA), not an arithmetic doubling to 100 dBA. With respect to how the human ear perceives changes in sound pressure level relative to changes in "loudness," scientific research demonstrates that the following general relationships hold between sound level and human perception for two sound levels with the same or very similar frequency characteristics:

- One dBA is the practical limit of accuracy for sound measurement systems and corresponds to an approximate 10 percent variation in the sound pressure level. A 1 dBA increase or decrease is a non-perceptible change in sound.
- A 3 dBA increase or decrease is a doubling (or halving) of acoustic pressure level and it corresponds to the threshold of change in loudness perceptible in a laboratory environment. In practice, the average person is not able to distinguish a 3 dBA difference in environmental sound outdoors.
- A 5 dBA increase or decrease is described as a perceptible change in sound level and is a discernible change in an outdoor environment.
- A 10 dBA increase or decrease is a tenfold increase or decrease in acoustic pressure level but is perceived as a doubling or halving in loudness (i.e., the average person will judge a 10 dBA change in sound level to be twice or half as loud).

To take into account sound fluctuations, environmental sound is commonly described in terms of equivalent continuous sound level (L_{eq}). The L_{eq} value is the energy-averaged sound level over a given measurement period. It is further defined as the steady, continuous sound level, over a specified time that has the same acoustic energy as the actual varying sound levels. Sound levels can also be described using statistical levels (L_n). This descriptor identifies the sound level that is exceeded "n" percent of the time over a measurement period (e.g., L_{90} = sound level exceeded 90 percent of the time). The sound level exceeded for a small percent of the time, L_{10}, closely corresponds to short-term, higher-level, intrusive noises (such as vehicle pass-by noise near a roadway). The sound level exceeded for a large percent of the time, L_{90}, closely corresponds to continuous, lower-level background noise (such as continuous noise from a distant industrial facility). L_{50} is

the level exceeded 50 percent of the time and is typically referred to the median sound level over a given period.

NOISE AND VIBRATION LEVEL REQUIREMENTS AND GUIDELINES

The applicable noise and vibration level requirements and guidelines are described in detail in the Project's Acoustical Analysis Report. Noise and vibration associated with operation of the 230-kV switchyard would be required to comply with the following noise standards:

- Kern County General Plan Noise Element 65 dBA L_{dn} exterior limit;
- Kern County General Plan Noise Element 45 dBA L_{dn} interior limit;
- Kern County Zoning Ordinance 65 dBA L_{dn} limit; and
- Kern County Zoning Ordinance nighttime limit, which is the higher of a 65 dBA L_{max} or 5 dB above ambient. Based on the ambient survey detailed in the Acoustical Analysis Report, the higher and applicable limit is 65 dBA L_{max} from 10:00 p.m. to 7:00 a.m..
- The Elephant Butte Specific Plan does not contain any noise standards and refers back to the Kern County Ordinance.

Construction of the 230-kV switchyard would be required to comply with the following noise standards:

- Federal Transit Administration (FTA) 80 dBA L_{eq} construction noise guidance level; and
- FTA construction vibration guidance levels of 65 vibration decibels (VdB) for human perception, 74 VdB for human annoyance, and 94 VdB for damage to sensitive structures; and
- Kern County Municipal Code Chapter 8.36.

CONSTRUCTION NOISE

The nearest noise sensitive area (NSA) is well over 1 mile away from the 230-kV switchyard. Assuming the same construction equipment and staging detailed in the Acoustical Analysis Report, the worst-case construction stage is system installation, which would produce a noise level of 61 dBA L_{eq} and vibratory level of 34 VdB at a distance of 1 mile from the 230-kV switchyard. These anticipated construction noise and vibration levels would comply with all applicable limits. Further, there are no residences within 1,000 feet of the 230-kV switchyard, such that the nighttime construction noise restrictions in Kern County Municipal Code Section 8.36.020 would not apply.

OPERATION NOISE

The CadnaA (Computer Aided Noise Analysis) computer noise model was used to calculate sound pressure levels from the operation of the Project equipment in the vicinity of the 230-kV switchyard. The same modeling methodology is detailed in the Acoustical Analysis Report (Tetra Tech 2025). The noise-producing equipment associated with the 230-kV switchyard is expected to be an emergency backup generator and heating, ventilation, and air-conditioning (HVAC) unit. The sound data associated with the emergency backup generator would have a sound pressure level of 66.3 dBA at 23 feet, and the HVAC unit would have a sound pressure level of 74.9 dBA at 5 feet. Measured from the nearest NSA at well over 1 mile away, the operational

noise from the 230-kV switchyard would be 17 dBA L_{eq} and 24 dBA L_{dn}. These noise levels would comply with all applicable limits.

DECOMMISSIONING NOISE

Noise levels from decommissioning would be similar to those during construction. The same types of heavy equipment and vehicles would be used to decommission the Project site as would be used to construct it. Decommissioning activities, like construction, would comply with County construction noise ordinance standards as detailed previously.

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Appendix K
Traffic Impact Analysis

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TRAFFIC IMPACT ANALYSIS

Discovery Solar PV and Storage Project
Kern County, California

December 2025

Prepared for

Discovery Solar PV and Storage, LLC
11455 El Camino Real # 160
San Diego, CA 92130

Prepared by

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Acronyms and Abbreviations

ADT	average daily traffic
Applicant	Discovery Solar PV and Storage, LLC
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CTMP	Construction Traffic Management Plan
FDOT	Florida Department of Transportation
gen-tie	generation tie line
HCM	Highway Capacity Manual
KCOG	Kern County Council of Governments
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
LOS	level of service
mph	miles per hour
PCE	passenger car equivalent
Project	Discovery Solar PV and Storage Project
PV	photovoltaic
quad	quadrangle
SCE	Southern California Edison
SR	State Route
TIA	Traffic Impact Analysis
UPRR	Union Pacific Railroad
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

Tetra Tech was retained by Discovery Solar PV and Storage, LLC (Applicant) to conduct a Traffic Impact Analysis (TIA) for the proposed Discovery Solar PV and Storage Project (Project). The purpose of this report is to document the findings and conclusions of the transportation analysis performed to assess potential impacts associated with construction and operation of the Project.

1.1 Project Description and Location

The Project includes development of a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 1,400 megawatts (MW) of renewable electrical energy with up to 8 gigawatt-hours of energy storage capacity (approximately 1,000 MW) on an approximately 7,700-acre Project site in an unincorporated area of southeastern Kern County, California (Figure 1). PV solar panels, a power collection system, including medium-voltage lines that connect the solar facilities, inverters, a switchyard, foundations, and transformers will be installed onsite. Associated Project infrastructure includes an operations and maintenance facility, telecommunication facilities, energy storage system(s), up to three onsite collector substations, interconnection and transmission systems, and temporary laydown yards. The Project may be constructed in multiple phases.

The Project will interconnect to the existing Windhub Substation, which is owned and operated by Southern California Edison (SCE). The interconnection will be via a newly constructed 230-kilovolt (kV) generation tie line (gen-tie) that will extend north from the Project site towards the Windhub Substation from on-site collector substations. A portion of the Project 230-kV gen-tie would be co-located within an existing gen-tie corridor (controlled by the Applicant and/or its affiliates). A high-voltage switchyard located immediately north of the Union Pacific Railroad (UPRR) rail line will also be constructed.

The Project is located in an unincorporated area in southeastern Kern County, on generally undeveloped and privately owned land, along the northern edge of the Antelope Valley. The Project site is located approximately 6 miles southwest of the unincorporated community of Mojave, approximately 9 miles southeast of the city of Tehachapi, and approximately 8 miles northwest of the unincorporated community of Rosamond. State Route (SR)-58 is north of the Project site, SR-14 is east of the Project site, and Tehachapi Willow-Springs Road runs between the Project site's boundaries. A network of existing named and unnamed dirt roads traverses the Project site. While the Los Angeles Department of Water and Power (LADWP) aqueduct roughly bisects the Project site, it is not included within the Project site. On-site, adjacent, and nearby land uses include renewable energy development, rural residential development, livestock grazing, heavy industrial and mining uses, and undeveloped lands. Elevations across the Project site are relatively flat, ranging from approximately 2,970 to 3,760 feet above mean sea level. The Project site is located within the U.S. Geological Survey (USGS) *Monolith, Willow Springs,* and *Soledad Mountain* 7.5-Minute Topographic Quadrangle Maps.

Due to the large size of the Project site, for ease of description in this TIA, the Project site is divided into six Sites, based on geography:

- **Site A** is the northwesternmost site, generally bounded to the north and south by unnamed roads and by Tehachapi Willow Springs Road to the west.
- **Site B** is directly east of Site A, roughly bisected by 90th Street West, and is bound to the north and east by unnamed roads.
- **Site C** is located south of Sites A and B, directly northwest of the LADWP aqueduct, and northeast of Tehachapi Willow Springs Road.
- **Site D** is south or east of the LADWP aqueduct, generally bound by Balboa Avenue to the southeast.
- **Site E** is located southwest of Tehachapi Willow Springs Road and northwest of the LADWP aqueduct.
- **Site F** is located approximately 1.5 miles south of Oak Creek Road and immediately north of the UPRR rail line.

The individual Project Sites as described above are shown on Figure 1.

Regional access to the Project would be provided by SR-14 to/from the south and northeast and CA-58 to/from the northwest. Locally, the Project site can be accessed via Tehachapi Willow Springs Road, Backus Road, and 90th Street West. New unpaved roads would be constructed to serve as access roads from the existing road network to Project facilities. New access roads would be up to 25 feet wide and would be cleared and compacted for travel and access to the Project facilities. These site access roads would remain in place for ongoing operations and maintenance activities after construction is completed. Implementation of the Project as proposed includes the following requests for General Plan Amendment (Circulation):

- General Plan Amendment No. 18, Map 197, to remove future road reservations on section and mid-section lines as called for within the Circulation Element of the Kern County General Plan; and to remove future road reservations on section and mid-section lines within the Project boundary.
- General Plan Amendment No. 5, Map 198, to remove road reservations on section and mid-section lines as called for within the Circulation Element of the Kern County General Plan; and to remove future road reservations on section and mid-section lines within the Project boundary.
- General Plan Amendment No. 10, Map 214, to remove road reservations on section and mid-section lines as called for within the Circulation Element of the Kern County General Plan; and to remove future road reservations on section and mid-section lines within the Project boundary.
- General Plan Amendment No. 7, Map 215, to remove road reservations on section and mid-section lines as called for within the Circulation Element of the Kern County General Plan; and to remove future road reservations on section and mid-section lines within the Project boundary.

1.1.1 Construction Phase

The Project consists of three phases: construction, operations and maintenance, and decommissioning. The highest volume of site-related trips would occur during the peak construction phase of the Project. Therefore, trip generation estimates associated with the peak construction phase workforce levels were used for this assessment. Transportation-related impacts resulting from decommissioning of the Project are expected to be similar to or less than those experienced during Project construction.

Construction activities for the Project generally fall into three main phases: site preparation; panel installation; and testing, commissioning, and cleanup. It is anticipated that the Project site could experience peak construction workforce levels of up to 664 construction workers at one time. Construction hours of operation generally would not occur between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and between 9:00 p.m. and 8:00 a.m. on weekends in compliance with Kern County's Noise Ordinance, Chapter 8.36. Peak construction activities are currently anticipated to occur for a period of approximately 3 months. The remainder of the Project construction period is anticipated to generate fewer vehicle trips.

1.1.2 Operation and Maintenance Phase

The Project would operate year-round. It is anticipated that approximately six permanent full-time staff employees would be needed to maintain the facility. Additional staff would also be needed for certain activities such as solar panel washing. Typical operations and maintenance activities that would occur on-site include, but are not limited to, liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters and battery energy storage systems; site security and management; additional communication protocol; repair and maintenance of solar facilities, battery storage facilities, substations, electrical transmission lines, and other Project facilities; vegetation management; and periodic panel washing. It is expected that staff would primarily operate from an operations facility that is off-site; however, small satellite portable office trailers may be utilized to help facilitate rapid repair of equipment.

Routine operations and maintenance activities at the Project site are not anticipated to result in a measurable increase in vehicle traffic. The number of maintenance workers traveling to the Project site is low; therefore, impacts to local traffic are not expected.

1.1.3 Decommissioning Phase

Traffic-related impacts resulting from decommissioning of the Project are expected to be similar to or less than those experienced during construction.

1.2 Study Area

The Study Area chosen for the transportation analysis was developed based on consultation with the Kern County Department of Public Works at a traffic scoping meeting held on April 29, 2024. The Study Area includes key roadways and intersections in the Project site vicinity that could be most impacted by construction of the Project.

The Study Area roadway/freeway segments are shown in Figure 2 and include:

1. SR-14 south of Silver Queen Road
2. SR-14 north of Rosamond Blvd
3. Backus Road between SR-14 Northbound Ramps and SR-14 Southbound Ramps
4. Backus Road west of Mojave-Tropico Road
5. Tehachapi Willow Springs Road south of Highline Road

The Study Area intersections include:

1. Backus Road at Tehachapi Willow Springs Road
2. SR-14 Southbound Ramps at Backus Road
3. SR-14 Northbound Ramps at Backus Road
4. Tehachapi Willow Springs Road at Oak Creek Road
5. Tehachapi Willow Springs Road at Site A/B/C Driveway and Site E Driveway
6. Tehachapi Willow Springs Road at Site D Driveways

1.3 Analysis Conditions

The combined critical peak demand periods of Project traffic and adjacent street traffic are anticipated to occur during weekday morning (6:00 to 9:00 a.m.) and weekday evening (4:00 to 7:00 p.m.) peak periods. The peak periods represent the highest cumulative total traffic for the Project and adjacent street system.

This TIA evaluates 24-hour weekday average daily traffic (ADT) on Study Area roadway segments and weekday morning and weekday evening peak hour traffic (the highest one hour of traffic during each peak period) at Study Area intersections. Four analysis conditions were evaluated and are briefly described below. It is anticipated that vehicle trips associated with construction of Site F would be associated with a future switchyard and would be minimal during the Project's overall peak construction phase. Therefore, it was assumed that all trips associated with the Project's peak construction activities would be distributed among the five solar sites (Sites A through E).

2024 Existing Conditions

Existing conditions were developed based on recent traffic counts collected in 2024 and do not include traffic associated with the Project or other area development projects that are planned or approved (not yet constructed).

2024 Existing Plus Project Conditions

Existing Plus Project conditions consist of Project-related traffic added to the 2024 Existing Conditions traffic volumes. Project traffic consists of peak construction-related traffic generated from Sites A through E. This traffic was distributed and assigned to the roadway segments and intersections in the Study Area to reflect the Existing Plus Project conditions.

2026 Cumulative Conditions

The Cumulative conditions (representative of the year 2026) consist of traffic associated with other approved and pending projects within 6 miles of the Study Area added to the 2024 Existing Conditions traffic volumes.

2026 Cumulative Plus Project

The Cumulative Plus Project conditions consist of Project-related traffic added to the 2026 Cumulative Conditions traffic volumes.

1.4 Analysis Methodology

This TIA evaluates the quality of traffic flow at Study Area roadways and intersections for the given traffic demands. As a basis for this assessment, intersection and roadway segment capacity analyses were conducted within the Study Area for the 2024 Existing, 2024 Existing Plus Project, 2026 Cumulative, and 2026 Cumulative Plus Project conditions consistent with Kern County guidelines.

Level of service (LOS) is commonly used as a qualitative description of roadway segments and intersection operations and is based on the capacity and the volume of traffic using a roadway segment or intersection. The LOS designations are defined as follows in the Kern County General Plan:

- LOS A – Free flow. No approach phase is fully used by traffic and no vehicle waits longer than one red indication. Insignificant delays.
- LOS B – Stable Operation. An occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.
- LOS C – Stable Operation. Major approach phase may become fully used. Most drivers feel somewhat restricted. Acceptable delays.
- LOS D – Approaching Unstable. Drivers may have to wait through more than one red signal cycle. Queues develop but dissipate rapidly, without excessive delays.
- LOS E – Unstable Operation. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. Significant delays.
- LOS F – Forced Flow. Represents jammed conditions. Intersection operates below capacity with several delays; may block upstream intersections.

The LOS analysis was prepared in accordance with Kern County General Plan policies; however, automobile delay, as measured by LOS, does not constitute a significant environmental effect under the California Environmental Quality Act (CEQA). Additionally, a Vehicle Miles Traveled (VMT) analysis was conducted for purposes of CEQA and to meet California Department of Transportation (Caltrans) requirements for preparation of TIAs. A discussion of the evaluation criteria and a summary of roadway segment and intersection capacity analyses results are presented below.

1.4.1 Roadway Segments

Kern County uses the Florida Department of Transportation's (FDOT) 2023 Multimodal Quality/Level of Service Handbook (Florida Tables) to evaluate roadway segment LOS. Table 1 presents roadway segment LOS thresholds by facility type in the Study Area as provided in the Florida Tables.

Table 1. FDOT Daily Roadway Segment Level of Service Thresholds

Roadway Configuration	Two-way Average Traffic (ADT) Threshold				
	LOS A	LOS B	LOS C	LOS D	LOS E
Two-Lane Undivided	-	4,600	8,200	14,000	28,500
Four-Lane Divided	-	32,000	45,800	55,700	63,900

Source: FDOT (2023) Appendix B: Florida's Generalized Service Volume Tables for Rural Highways (C-2). Thresholds based on FDOT (2023). Adjustments made according to appropriate area conditions, following FDOT guidelines.
ADT = average daily traffic; LOS = Level of Service

The daily volume thresholds listed in Table 1 are approximate and assume typical roadway characteristics. Actual threshold volumes for each LOS listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks and other heavy vehicles, travel lane widths, signal timing characteristics, on-street parking, and volume of cross traffic and pedestrians.

1.4.2 Intersections

Kern County utilizes Highway Capacity Manual (HCM) intersection analysis methodology to analyze the operation of signalized and unsignalized intersections. All study intersections included in this TIA are currently unsignalized. The HCM analysis methodology describes the operation of an intersection using a range of LOS from LOS A (minimal delay) to LOS F (severely congested conditions), based on the corresponding control delay experienced per vehicle for unsignalized intersections.

At unsignalized study intersections, the LOS was calculated using the HCM Methodology (TRB 2016). The Synchro 11 capacity analysis software was used to determine intersection LOS for all study scenarios. Synchro is consistent with the HCM 6th Edition methodology (TRB 2016). HCM methodology utilizes average control delay per vehicle for subject lane to determine LOS for intersections. Table 2 shows the LOS for unsignalized intersections under the HCM methodology (delay).

Table 2. Intersection Levels of Service

Levels of Service	Unsignalized Intersection Control Delay (in seconds)
A	< 10.0
B	>10.0 to < 15.0
C	>15.0 to < 25.0
D	>25.0 to < 35.0
E	>35.0 to < 50.0
F	> 50.0

Source: TRB (2016)

1.4.3 Vehicle Miles Traveled

The California Legislature, through Senate Bill 743, Senate Bill 32, and Executive Order B-16-12, require projects, under CEQA, to consider the effects of a project on the surrounding transportation system, using VMT as an appropriate measure of impact. The specific goal is reduction of greenhouse gas emissions by reducing reliance on individual vehicles, improving mass transit, and reducing trip length via denser infill development.

2.0 EXISTING CONDITIONS

An effective evaluation of potential transportation impacts associated with the Project requires a thorough understanding of existing traffic conditions on roadways and intersections in the vicinity of the Project site. The existing conditions assessment consists of a desktop inventory of roadway and intersection geometries and traffic control devices; collection of daily and peak period traffic volumes; review of pedestrian, bicycle and transit accommodations; and analysis of existing traffic operations.

2.1 Study Area Roadways

The Project site is located within Kern County, southwest of Mojave, California. Access to the Project site is provided by several regional travel routes that are owned and operated by Caltrans or Kern County. Project-generated traffic would travel to and from the Project site via the following key Study Area roadways:

Backus Road. Backus Road is classified as a major arterial roadway and is under local jurisdiction (Kern County). Within the Study Area, Backus Road provides a single travel lane in each direction. Backus Road generally runs in an east-west direction. Land use along this roadway is primarily residential and unoccupied parcels. The posted speed limit along Backus Road in the Study Area is 55 miles per hour (mph). Backus Road provides a connection between SR-14 and Tehachapi Willow Springs Road.

Caltrans Route 14 (SR-14). SR-14 is classified as a rural principal arterial and is under Caltrans jurisdiction. Within the Study Area, SR-14 generally provides two travel lanes in each direction. There are grade-separated interchanges at Backus Road and Silver Queen Road near the Project site. The posted speed limit along SR-14 in the Study Area is 70 mph. Land use along this roadway is primarily unoccupied parcels.

Tehachapi Willow Springs Road. Tehachapi Willow Springs Road is classified as a major arterial roadway and is under local jurisdiction (Kern County). Within the Study Area, Tehachapi Willow Springs Road provides a single travel lane in each direction. Tehachapi Willow Springs Road generally runs in a north-south direction and provides access to Oak Creek Road, Backus Road, and Rosamond Boulevard. Land use along this roadway is primarily unoccupied parcels with some existing renewable energy uses between Oak Creek Road and Rosamond Boulevard. The posted speed limit is 55 mph.

Rosamond Boulevard. Rosamond Boulevard is classified as a principal arterial roadway and is under local jurisdiction (Kern County). Within the Study Area, Rosamond Boulevard provides a single travel lane in each direction to the west of 35th Street West. Between 35th Street West and SR-14, Rosamond Boulevard provides two travel lanes in each direction and a center two-way left-turn lane. Rosamond Boulevard generally runs in an east-west direction. Land use along this roadway is primarily residential and unoccupied parcels. Backus Road provides a connection between SR-14 and Tehachapi Willow Springs Road. The posted speed limit is 55 mph.

2.2 Study Area Intersections

The Study Area intersections chosen for detailed analysis are shown in Figure 2 and are listed below:

1. Backus Road at Tehachapi Willow Springs Road
2. SR-14 Southbound Ramps at Backus Road
3. SR-14 Northbound Ramps at Backus Road
4. Tehachapi Willow Springs Road at Oak Creek Road
5. Tehachapi Willow Springs Road at Site A/B/C Driveway & Site E Driveway
6. Tehachapi Willow Springs Road at Site D Driveways

Existing lane geometry and traffic control at each study intersection is documented in the capacity analysis worksheets provided in Appendix D and detailed for key intersections below.

Backus Road at Tehachapi Willow Springs Road. Tehachapi Willow Springs Road intersects Backus Road from the north and south to form a four-way unsignalized intersection. All approaches consist of a single general-purpose lane and operate under STOP control (all-way stop control). There are currently no sidewalks or crosswalks at the intersection. Unoccupied parcels surround the study intersection.

Backus Road at Aerospace Highway (SR-14) Southbound Ramps. The Aerospace Highway (SR-14) southbound off-ramp approaches Backus Road from the north to form a three-way, unsignalized intersection. The Backus Road eastbound and westbound approaches each consist of a single general-purpose lane. The southbound off-ramp approach consists of a single general-purpose lane and is under STOP control. There are currently no sidewalks or crosswalks at the intersection. Limited commercial and residential land uses are located west of the intersection.

Backus Road at Aerospace Highway (SR-14) Northbound Ramps. The Aerospace Highway (SR-14) northbound off-ramp approaches Backus Road from the south to form a three-way, unsignalized intersection. The Backus Road eastbound and westbound approaches each consist of a single

general-purpose lane. The northbound off-ramp approach consists of a single general-purpose lane and is under STOP control. There are currently no sidewalks or crosswalks at the intersection. Limited commercial and residential land uses are located east of the intersection.

Tehachapi Willow Springs Road at Oak Creek Road. Oak Creek Road approaches Tehachapi Willow Springs Road from the east to form a three-way, unsignalized intersection. The Tehachapi Willow Springs Road northbound and southbound approaches each consist of a single general-purpose lane. The Oak Creek Road westbound approach consists of a single general-purpose lane and is under STOP control. There are currently no sidewalks or crosswalks at the intersection. Energy production land uses are located southwest of the intersection.

Tehachapi Willow Springs Road at Site Driveways. The Project site was assumed to be accessed via two proposed driveways to provide a conservative assessment of future operations. The total estimated Project trip generation for Sites A, B, and C was combined and analyzed as a two-way stop-controlled intersection across from the total estimated Project trip generation for Site E. The estimated Project trip generation for Site D was analyzed at a second two-way STOP-controlled intersection. Site D spans Tehachapi Willow Springs Road. Site D trips were assigned proportionally to each driveway as described further in Section 3.2.

2.3 Transit System

Kern Transit provides passenger bus service between and within the rural communities of Kern County. There are 17 fixed transit routes and Dial-A-Ride service available in most communities. The transit system offers intercity service along with local transit service as well as connections to Metrolink in Lancaster. Currently, there are no transit stops located in the Study Area.

2.4 2024 Existing Traffic Volumes

Existing traffic volumes were developed based on recent traffic data available from traffic count data reported in other area traffic studies (Ruettgers and Schuler Civil Engineers 2022) and data available on the Kern Council of Governments Traffic Count Database (KCOG 2024). Where recent (2022 to present) data were unavailable, new intersection turning movement counts and automatic traffic recorder counts were collected at Study Area intersections and roadways on Tuesday, June 4, 2024.

Raw traffic count data for the June 4, 2024 data are provided in Appendix A. Existing 2024 weekday morning and evening peak hour and ADTs are shown on Figure 2.

2.5 2024 Existing Roadway Segment Operations

A roadway segment LOS analysis was prepared for existing conditions using the roadway segment LOS methodologies discussed in Section 1. Table 3 shows results of the 2024 Existing conditions LOS analysis for Study Area roadway segments. As shown in Table 3, all Study Area roadway segments are currently operating below capacity at LOS A operations.

Table 3. 2024 Existing Weekday Daily Roadway Segment LOS

Roadway Segment	Configuration	LOS "D" ADT[1/]	Existing ADT	Existing LOS[2/]
SR-14 (South of Silver Queen Road)	4-Lane Divided	55,700	19,600[3/]	A
SR-14 (North of Rosamond Boulevard)	4-Lane Divided	55,700	21,200[3/]	A
Backus Road (Between SR-14 NB Ramps & SR-14 Southbound Ramps)	2-Lane Undivided	14,000	1,013[4/]	A
Backus Road (West of Mojave-Tropico Road)	2-Lane Undivided	14,000	2,194[5/]	A
Tehachapi Willow Springs Road (South of Highline Road)	2-Lane Undivided	14,000	4,296[6/]	A

1/ Average Daily Traffic
2/ Level of Service
3/ Caltrans Traffic Census Program (2024). Latest available traffic volumes reflect 2022 Average Annual Daily Traffic (AADT).
4/ 2022 ADT grown to 2024 ADT based on Ruettgers & Schuler Civil Engineers (2022).
5/ ADT collected on June 4, 2024, by Tetra Tech.
6/ ADT collected on January 11, 2024.

2.6 2024 Existing Intersection Operations

An intersection LOS analysis was prepared for existing conditions using HCM methodology via the Synchro LOS software discussed in Section 1. Table 4 shows results of the Existing Conditions intersection LOS analysis. As shown in Table 4, all Study Area intersections are currently operating below capacity at LOS B or better during the weekday morning and evening commuter peak hours.

Table 4. 2024 Existing Weekday Peak Hour Intersection LOS

No.	Intersection & Movement		AM Peak Hour				PM Peak Hour			
			V/C[1/]	Delay[2/]	LOS[3/]	95th Q[4/] (feet)	V/C	Delay	LOS	95th Q (feet)
1	Tehachapi Willow Springs Road @ Backus Road	NB	0.10	7.9	A	7.5	0.17	8.1	A	15.0
		SB	0.00	7.0	A	0	0.00	7.6	A	0.0
		EB	0.08	8.9	A	7.5	0.08	7.6	A	7.5
		WB	0.25	9.0	A	25	0.15	8.1	A	12.5
2	SR-14 Southbound Ramps @ Backus Road	WB Left	0.00	7.5	A	0	0.01	7.4	A	0.0
		WB Through	0.00	0.0	A	0	0.00	0.0	A	0.0
		SB	0.03	9.4	A	2.5	0.05	9.2	A	5.0
3	SR-14 Northbound Ramps @ Backus Road	NB Left	0.07	9.4	A	5	0.10	9.4	A	7.5
		EB Left	0.01	7.3	A	0	0.01	7.4	A	0.0
		EB Through	0.00	0.0	A	0	0.00	0.0	A	0.0
4	Tehachapi Willow Springs Road @ Oak Creek Road	WB	0.04	9.9	A	2.5	0.12	10.0	B	10.0
		SB Left	0.05	7.7	A	5	0.02	8.2	A	2.5

No.	Intersection & Movement		AM Peak Hour				PM Peak Hour			
			V/C[1/]	Delay[2/]	LOS[3/]	95th Q[4/] (feet)	V/C	Delay	LOS	95th Q (feet)
		SB Through	0.00	0.0	A	0	0.00	0.0	A	0.0

1/ Volume to Capacity Ratio
2/ Delay in seconds per vehicle
3/ Level of Service
4/ Vehicle queues measures in feet

EB = eastbound; NB = northbound; SB = southbound; WB = westbound

3.0 PROJECT TRIPS

This section documents the estimated trip generation, distribution, and assignment of vehicle trips generated by the Project. As a conservative measure, only traffic associated with the peak construction phase of the Project was analyzed.

3.1 Trip Generation

The Project would consist of three phases: construction, operations and maintenance, and decommissioning. The highest volume of Project-related trips would occur during the peak construction phase. Therefore, for the most conservative estimate of trips, trip generation for the peak construction phase workforce levels was estimated for this assessment.

Construction of the Project is expected to include site preparation, panel installation, inspections, and equipment deliveries. It is anticipated that the Project site could experience peak construction workforce levels of up to 664 construction workers at one time. Construction would primarily occur during daylight hours, Monday through Friday, between 6:00 a.m. and 6:00 p.m.; however, some work may occur on Saturday and Sunday, as required, to meet the construction schedule and/or to promote the health and safety of workers.

During peak construction, it is anticipated that up to 36 off-site delivery trucks (trucks delivering materials from off-site locations), and 24 on-site trucks (trucks delivering workers and/or materials between the work areas) would be needed. For analysis purposes, it was assumed that each truck would generate two trips per day to and from the Project site (one exiting trip and one entering trip). Due to the remote location of the Project site, workers would be encouraged to carpool. Therefore, a carpool factor of 1.25 (i.e., 1.25 persons per vehicle) has been applied to the number of workers. A passenger car equivalent (PCE) factor was applied to the truck trips to account for the Project's truck traffic and provide a conservative measurement in terms of potential impacts of Project-related truck traffic.

Thirty percent of on-site and delivery truck traffic to and from the Project site is conservatively estimated to occur during the morning and evening peak hours.

A summary of the Project's trip generation estimates is shown in Table 5. Supporting trip generation assumptions are provided in Appendix B.

Table 5. Project Peak Construction Trip Generation Estimates

Vehicle Type	Daily Quantity	Daily Trips[1/]	Morning Peak Hour		Afternoon Peak Hour	
			Inbound	Outbound	Inbound	Outbound
Workers	664	1062	531	0	0	531
Delivery Vehicles	36	216	33	33	33	33
Onsite Trucks	24	144	22	22	22	22
	Total Trips	**1,422**	**585**	**54**	**54**	**585**

1/ A vehicle occupancy rate of 1.25 was applied to workers; a passenger car equivalent factor of 3.0 was applied to delivery trucks and on-site trucks.

3.2 Trip Distribution and Assignment

It is anticipated that the construction workforce would commute to the Project site each day from local communities and report to the designated construction staging yards prior to the beginning of each workday. It is anticipated that vehicle trips associated with construction of Site F (Future Switchyard) would be minimal during the Project's overall peak construction phase. Therefore, it was assumed that all trips associated with the Project's peak construction activities would be distributed among the five solar sites (Sites A through E).

It was assumed that the construction workforce would be drawn from within an approximately one-hour drive to the Project site. Construction staff not drawn from the local labor pool are anticipated to stay in hotels in Rosamond, Mojave, Lancaster, Bakersfield, or other local communities. Project trip distribution patterns were estimated using United States Census population data and routes determined based on existing travel times during peak commuting periods. Regional trip distribution patterns to and from the location of each of the five Project solar sites (Sites A through E) within the Study Area are shown in Figure 3. The supporting trip distribution calculations are provided in Appendix C.

Regional trip distribution patterns were then applied to the trip generation estimates summarized in Table 5. The Project trips were assigned proportionally to each of the five Project sites (Sites A through E) based on the PV solar panel acreage serving each Project site driveway to obtain the Project-generated turning movements at the Study Area roadways and intersections. Sites A, B, and C were combined to determine the estimated trip generation for the northern quadrant of the Project site. Site D was split into an eastern quadrant (southeast of the LADWP aqueduct and northeast of Tehachapi Willow Springs Road), and a southern quadrant (southeast of the LADWP aqueduct and southwest of Tehachapi Willow Springs Road). The remaining Project-generated trips were assigned to Site E, located in the western quadrant of the Project site. The resulting Project peak construction peak hour trip assignment is shown in Figure 4.

4.0 2024 EXISTING PLUS PROJECT CONDITIONS

This section documents potential impacts on Study Area intersections and roadway segments related to the Project's peak construction phase under Existing Plus Project (peak construction) conditions.

4.1 2024 Existing Plus Project Traffic Volumes

Project trip assignments (in PCE) shown in Figure 4 were added to the existing traffic volumes shown in Figure 2 to estimate the Existing Plus Project traffic volumes. Figure 5 shows the 2024 Existing Plus Project traffic volumes that were used to evaluate Existing Plus Project roadway and intersection operations. To provide a conservative assessment of roadway segments, the total daily estimate trips were assigned to each segment.

4.2 2024 Existing Plus Project Roadway Segment Operations

An LOS analysis was conducted for Study Area roadway segments to evaluate the 2024 Existing Plus Project for 24-hour roadway capacity conditions. Study Area roadway segments were analyzed using the FDOT methodology described in Section 1.

Table 6 provides a summary of the results for the Existing Plus Project LOS analysis and provides a comparison to the existing (Without Project) conditions for average daily traffic volumes. Based on the appropriate significance criteria, Study Area roadway segments are anticipated to operate well below capacity at LOS B or better operations.

Table 6. 2024 Existing Plus Project Weekday Daily Roadway Segment LOS

Roadway Segment	Configuration	LOS "D" ADT	Existing ADT[1/]	Existing LOS[2/]	Project Traffic	Existing Plus Project ADT	Existing Plus Project LOS
SR-14 (South of Silver Queen Road)	4 Lane Divided	55,700	19,600[3]	A	1,422	21,022	A
SR-14 (North of Rosamond Boulevard)	4 Lane Divided	55,700	21,200[3]	A	1,422	22,622	A
Backus Road (Between SR-14 NB Ramps & SR-14 Southbound Ramps)	2 Lane Undivided	14,000	1,013[4]	A	1,422	2,435	A
Backus Road (West of Silver Queen Road)	2 Lane Undivided	14,000	2,194[5]	A	1,422	3,616	A
Tehachapi Willow Springs Road (South of Highline Road)	2 Lane Undivided	14,000	4,296[6]	A	1,422	5,718	B

1/ Average Daily Traffic
2/ Level of Service
3/ Caltrans Traffic Census Program (2024). Latest available traffic volumes reflect 2022 Average Annual Daily Traffic (AADT).
4/ 2022 ADT grown to 2024 ADT based on Ruettgers & Schuler Civil Engineers (2022).
5/ ADT collected on June 4, 2024, by Tetra Tech.
6/ ADT collected on January 11, 2024. Available on the Kern Council of Governments Traffic Count Database.

4.3 2024 Existing Plus Project Intersection Operations

An intersection operations analysis was conducted to evaluate the 2024 Existing Plus Project weekday morning and evening peak hour conditions. Intersection operations were calculated using the LOS methodology described in Section 1. Table 7 provides a summary of results for the 2024 Existing Plus Project LOS analysis and provides a comparison to the existing (Without Project) conditions for the weekday peak hours using HCM methodology for study intersections. As shown in Table 7, Study Area

intersections are anticipated to operate below capacity at acceptable LOS C or better for the 2024 Existing Plus Project weekday commuter peak hour conditions. Detailed LOS worksheets are included in Appendix D.

Table 7. 2024 Existing Plus Project Weekday Peak Hour Intersection LOS

No.	Intersection & Movement		Existing Conditions								Existing Plus Project Conditions							
			AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
			V/C[1/]	Delay[2/]	LOS[3/]	95th Q[4/] (feet)	V/C	Delay	LOS	95th Q (feet)	V/C	Delay	LOS	95th Q[4] (feet)	V/C	Delay	LOS	95th Q (FT)
1	Tehachapi Willow Springs Road @ Backus Road	NB	0.10	7.9	A	7.5	0.17	8.1	A	15.0	0.47	12.8	B	62.5	0.22	9.1	A	20.0
		SB	0.00	7.0	A	0	0.00	7.6	A	0.0	0.00	8.4	A	0.0	0.00	8.7	A	0.0
		EB	0.08	8.9	A	7.5	0.08	7.6	A	7.5	0.41	13.5	B	50.0	0.13	8.9	A	10.0
		WB	0.25	9.0	A	25	0.15	8.1	A	12.5	0.37	11.8	B	42.5	0.66	15.8	C	127.5
2	SR-14 Southbound Ramps @ Backus Road	WB Left	0.00	7.5	A	0	0.01	7.4	A	0.0	0.00	7.6	A	0.0	0.01	7.8	A	0.0
		WB Through	0.00	0.0	A	0	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0.0
		SB	0.03	9.4	A	2.5	0.05	9.2	A	5.0	0.07	10.4	B	5.0	0.06	9.5	A	5.0
3	SR-14 Northbound Ramps @ Backus Road	NB Left	0.07	9.4	A	5	0.10	9.4	A	7.5	0.31	11.1	B	32.5	0.13	9.9	A	10.0
		EB Left	0.01	7.3	A	0	0.01	7.4	A	0.0	0.01	7.3	A	0.0	0.03	7.4	A	2.5
		EB	0.00	0.0	A	0	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0.0
4	Tehachapi Willow Springs Road @ Oak Creek Road	WB	0.04	9.9	A	2.5	0.12	10.0	B	10.0	0.05	10.6	B	5.0	0.15	12.0	B	12.5
		SB Left	0.05	7.7	A	5	0.02	8.2	A	2.5	0.05	7.7	A	5.0	0.02	8.9	A	2.5
		SB Through	0.00	0.0	A	0	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0.0
5	Tehachapi Willow Springs Road @ Site A, B, C, & Site E Driveways	NB Left	*Intersection does not exist in Existing Conditions.*				*Intersection does not exist in Existing Conditions.*				0.11	8.3	A	10.0	0.01	7.5	A	0.0
		NB Through									0.00	0.0	A	0.0	0.00	0.0	A	0.0
		EB									0.05	14.5	B	2.5	0.30	12.8	B	32.5
		WB									0.06	18.2	C	5.0	0.43	18.5	C	52.5
		SB Left									0.06	7.9	A	5.0	0.01	7.9	A	0.0
		SB Through									0.00	0.0	A	0.0	0.00	0.0	A	0.0
6	Tehachapi Willow Springs Road @ Site D Driveways	NB Left	*Intersection does not exist in Existing Conditions.*				*Intersection does not exist in Existing Conditions.*				0.00	7.7	A	0.0	0.00	8.1	A	0.0
		NB Through									0.00	0.0	A	0.0	0.00	0.0	A	0.0
		EB									0.00	9.4	A	0.0	0.01	12.4	B	0.0
		WB									0.06	16.9	C	5.0	0.50	20.4	C	70.0
		SB Left									0.08	8.7	A	5.0	0.01	7.7	A	0.0
		SB Through									0.00	0.0	A	0.0	0.00	0.0	A	0.0

1/ Volume to Capacity Ratio
2/ Delay in seconds per vehicle
3/ Level of Service
4/ Vehicle queues measures in feet

EB = eastbound; NB = northbound; SB = southbound; WB = westbound

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5.0 2026 CUMULATIVE (WITHOUT PROJECT) CONDITIONS

This section presents the results of a cumulative condition analysis that was conducted for a short-term, 2-year horizon period where traffic associated with other approved and pending projects in the Study Area is added to the 2024 Existing traffic volumes.

5.1 2026 Cumulative Projects

A list of cumulative projects within a 6-mile radius of the Project site was obtained from the Kern County Planning and Natural Resources Department Database (see Appendix E). Based on review of the Project characteristics, status, and locations of cumulative projects, the following projects were identified that would likely add traffic to Study Area roadway segments and intersections in the design year 2026.

- Pacific Steel Group Steel Mill
- TNRE Organic Waste to Energy Facility

The locations of these projects and their anticipated traffic volumes are shown in Figure 6. The Bellefield Solar Project was under construction at the time the 2024 traffic counts were collected and, therefore, traffic associated with that project's construction activities was assumed to be included in the as-counted traffic volumes.

The Enterprise Solar Storage Project currently under construction near the Project site is anticipated to be completed prior to the construction of the Discovery Solar PV and Storage Project. Therefore, traffic associated with the Enterprise Solar Storage Project's construction activities are not included in the development of the 2026 Cumulative (Without Project) traffic volumes.

5.2 2026 Cumulative (Without Project) Traffic Volumes

Traffic associated with the cumulative background projects included for analysis was based on traffic studies prepared by others for those projects. Table 8 provides a summary of the daily and peak hour trip generation estimates for each project.

Table 8. 2026 Cumulative Background Projects Trip Generation Summary

No.	Project Description	Daily Trips	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
1	Pacific Steel Group Steel Mill[1/]	1,216	214	70	284	176	214	390
2	TNRE Organic Waste to Energy Facility[2/]	702	247	0	247	0	247	247
	Total Trip Generation	**1,918**	**461**	**70**	**531**	**176**	**461**	**637**

1/ LAV/Pinnacle Engineering, Inc. (2023)
2/ Ruettgers & Schuler Civil Engineers (2022).

Using data available in the traffic studies prepared by others for the cumulative projects, the cumulative projects were distributed through the Study Area network, primarily along SR-14, Backus Road, and Sierra Highway. The cumulative project trip assignment is documented in the Traffic Projection Model in Appendix E.

Trips associated with the cumulative projects were then added to the 2024 Existing Conditions traffic volumes at Study Area roadways and intersections. Resulting weekday daily, morning and evening peak hour traffic volumes for the 2026 Cumulative (Without Project) conditions are presented in Figure 7.

5.3 2026 Cumulative (Without Project) Roadway Segment Operations

An ADT roadway segment LOS analysis was conducted for the Study Area to evaluate the 2026 Cumulative (Without Project) conditions. Study Area roadway segments were analyzed using the methodology described in Section 1. Table 9 presents the results of the analysis with 2026 Cumulative (Without Project) traffic volumes added to 2024 Existing conditions traffic volumes. As shown in Table 9, Study Area roadway segments are anticipated to operate at LOS B or better under 2026 Cumulative (Without Project) conditions.

Table 9. 2026 Cumulative (Without Project) Weekday Daily Roadway Segment LOS

Roadway Segment	Configuration	LOS "D" ADT[1/]	Cumulative ADT	Cumulative LOS[2/]
SR-14 (South of Silver Queen Road)	4-Lane Divided	55,700	21,518	A
SR-14 (North of Rosamond Boulevard)	4-Lane Divided	55,700	23,118	A
Backus Road (Between SR-14 Northbound Ramps & SR-14 Southbound Ramps)	2-Lane Undivided	14,000	2,931	A
Backus Road (West of Silver Queen Road)	2-Lane Undivided	14,000	4,112	A
Tehachapi Willow Springs Road (South of Highline Road)	2-Lane Undivided	14,000	6,214	B

1/ Average Daily Traffic
2/ Level of Service

5.4 2026 Cumulative (Without Project) Intersection Operations

An intersection operations analysis was conducted for the Study Area to evaluate 2026 Cumulative (Without Project) weekday morning and evening peak hour conditions. Intersection operations were calculated using the LOS methodology described in Section 1. Table 10 presents the results of the analysis. LOS worksheets are provided in Appendix D. As shown in Table 10, Study Area intersections are anticipated to operate below capacity at LOS C or better during both of the weekday commuter peak hours.

Table 10. 2026 Cumulative (Without Project) Weekday Peak Hour Intersection LOS

No.	Intersection & Movement		AM Peak Hour				PM Peak Hour			
			V/C[1/]	Delay[2/]	LOS[3/]	95th Q[4/] (feet)	V/C	Delay	LOS	95th Q (feet)
1	Tehachapi Willow Springs Road @ Backus Road	NB	0.10	7.9	A	7.5	0.17	8.1	A	15.0
		SB	0.00	7.0	A	0.0	0.00	7.6	A	0.0
		EB	0.08	8.9	A	7.5	0.08	7.6	A	7.5
		WB	0.25	9.0	A	25.0	0.15	8.1	A	12.5
2	SR-14 Southbound Ramps @ Backus Road	WB Left	0.03	7.6	A	2.5	0.17	7.9	A	15.0
		WB Through	0.00	0.0	A	0.0	0.00	0.0	A	0.0
		SB	0.21	11.6	B	20.0	0.34	19.7	C	37.5
3	SR-14 Northbound Ramps @ Backus Road	NB Left	0.49	13.4	B	67.5	0.27	12.8	B	27.5
		EB Left	0.01	7.4	A	0.0	0.01	8.3	A	0.0
		EB	0.00	0.0	A	0.0	0.00	0.0	A	0.0
4	Tehachapi Willow Springs Road @ Oak Creek Road	WB	0.04	9.9	A	2.5	0.12	10.0	B	10.0
		SB Left	0.05	7.7	A	5.0	0.02	8.2	A	2.5
		SB Through	0.00	0.0	A	0.0	0.00	0.0	A	0.0

1/ Volume to Capacity Ratio
2/ Delay in seconds per vehicle
3/ Level of Service
4/ Vehicle queues measures in feet

6.0 2026 CUMULATIVE PLUS PROJECT CONDITIONS

This section documents impacts on Study Area intersections and roadway segments related to construction-related Project traffic under 2026 Cumulative Plus Project (peak construction phase) conditions.

6.1 2026 Cumulative Plus Project Traffic Volumes

The 2026 Cumulative Plus Project conditions consist of Project-related traffic added to the 2026 Cumulative (Without Project) Conditions traffic volumes. Project trips shown in Figure 4 for peak construction activities were added to the 2026 Cumulative (Without Project) condition traffic volumes shown in Figure 7. The resulting 2026 Cumulative Plus Project traffic volumes are shown in Figure 8.

6.2 2026 Cumulative Plus Project Roadway Segment Operations

An ADT roadway segment LOS analysis was conducted for the Study Area to evaluate the 2026 Cumulative Plus Project conditions. Study area roadway segments were analyzed using the methodology described in Section 1. Table 11 presents the results of the analysis with 2026 Cumulative Plus Project traffic volumes. As shown in Table 11, Study Area roadway segments are anticipated to operate at acceptable LOS B or better under 2026 Cumulative Plus Project conditions.

Table 11. 2026 Cumulative Plus Project Weekday Daily Roadway Segment LOS

Roadway Segment	Configuration	LOS "D" ADT	Cumulative ADT[1/]	Cumulative LOS[2/]	Project Traffic	Cumulative Plus Project ADT	Cumulative Plus Project LOS
SR-14 (South of Silver Queen Road)	4-Lane Divided	55,700	21,518	A	1,422	22940	A
SR-14 (North of Rosamond Boulevard)	4-Lane Divided	55,700	23,118	A	1,422	24540	A
Backus Road (Between SR-14 Northbound Ramps & SR-14 Southbound Ramps)	2-Lane Undivided	14,000	2,931	A	1,422	4353	A
Backus Road (West of Silver Queen Road)	2-Lane Undivided	14,000	4,112	A	1,422	5534	B
Tehachapi Willow Springs Road (South of Highline Road)	2-Lane Undivided	14,000	6,214	B	1,422	7636	B

1/ Average Daily Traffic
2/ Level of Service

6.3 2026 Cumulative Plus Project Intersection Operations

Table 12 summarizes the 2026 Cumulative Plus Project LOS analysis results and provides a comparison to the 2026 Cumulative (Without Project) conditions for the weekday peak hours. Detailed LOS worksheets are included in Appendix D. As shown in Table 12, Study Area intersections are anticipated to operate below capacity at acceptable LOS D or better during both peak hours.

Table 12. 2026 Cumulative Plus Project Peak Hour Intersection LOS

No.	Intersection & Movement		Cumulative Conditions								Cumulative Plus Project Conditions							
			AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
			V/C[1/]	Delay[2/]	LOS[3/]	95th Q[4/] (feet)	V/C	Delay	LOS	95th Q (feet)	V/C	Delay	LOS	95th Q[4] (feet)	V/C	Delay	LOS	95th Q (feet)
1	Tehachapi Willow Springs Road @ Backus Road	NB	0.10	7.9	A	7.5	0.17	8.1	A	15.0	0.47	12.8	B	62.5	0.22	9.1	A	20.0
		SB	0.00	7.0	A	0.0	0.00	7.6	A	0.0	0.00	8.4	A	0	0.00	8.7	A	0.0
		EB	0.08	8.9	A	7.5	0.08	7.6	A	7.5	0.41	13.5	B	50	0.13	8.9	A	10.0
		WB	0.25	9.0	A	25.0	0.15	8.1	A	12.5	0.37	11.8	B	42.5	0.66	15.8	C	127.5
2	SR-14 Southbound Ramps @ Backus Road	WB Left	0.03	7.6	A	2.5	0.17	7.9	A	15.0	0.04	7.7	A	2.5	0.20	8.6	A	20.0
		WB Through	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0	0.00	0.0	A	0.0
		SB	0.21	11.6	B	20.0	0.34	19.7	C	37.5	0.32	14.6	B	35	0.41	24.5	C	47.5
3	SR-14 Northbound Ramps @ Backus Road	NB Left	0.49	13.4	B	67.5	0.27	12.8	B	27.5	0.81	27.1	D	217.5	0.32	14.2	B	35.0
		EB Left	0.01	7.4	A	0.0	0.01	8.3	A	0.0	0.01	7.4	A	0	0.04	8.4	A	2.5
		EB	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0	0.00	0.0	A	0.0
4	Tehachapi Willow Springs Road @ Oak Creek Road	WB	0.04	9.9	A	2.5	0.12	10.0	B	10.0	0.05	10.6	B	5	0.15	12.0	B	12.5
		SB Left	0.05	7.7	A	5.0	0.02	8.2	A	2.5	0.05	7.7	A	5	0.02	8.9	A	2.5
		SB Through	0.00	0.0	A	0.0	0.00	0.0	A	0.0	0.00	0.0	A	0	0.00	0.0	A	0.0
5	Tehachapi Willow Springs Road @ Site A, B, C, & Site E Driveways	NB Left	*Intersection does not exist in Existing Conditions.*				*Intersection does not exist in Existing Conditions.*				0.11	8.3	A	10	0.01	7.5	A	0.0
		NB Through									0.00	0.0	A	0	0.00	0.0	A	0.0
		EB									0.05	14.3	B	2.5	0.30	12.8	B	32.5
		WB									0.06	17.8	C	5	0.43	18.5	C	52.5
		SB Left									0.05	7.9	A	5	0.01	7.9	A	0.0
		SB Through									0.00	0.0	A	0	0.00	0.0	A	0.0
6	Tehachapi Willow Springs Road @ Site D Driveways	NB Left	*Intersection does not exist in Existing Conditions.*				*Intersection does not exist in Existing Conditions.*				0.00	7.7	A	0	0.00	8.1	A	0.0
		NB Through									0.00	0.0	A	0	0.00	0.0	A	0.0
		EB									0.00	9.4	A	0	0.01	12.4	B	0.0
		WB									0.06	16.9	C	5	0.50	20.4	C	70.0
		SB Left									0.08	8.7	A	5	0.01	7.7	A	0.0
		SB Through									0.00	0.0	A	0	0.00	0.0	A	0.0

1/ Volume to Capacity Ratio
2/ Delay in seconds per vehicle
3/ Level of Service
4/ Vehicle queues measures in feet

EB = eastbound; NB = northbound; SB = southbound; WB = westbound

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7.0 VEHICLE MILES TRAVELED

As of 2020, Caltrans no longer uses LOS as a measurement of traffic impacts. Senate Bill 743 allowed for new ways to measure traffic impacts on State Highways, and since July 1, 2020, VMT is the standard used to determine traffic impacts on State Highways and must be used in any CEQA document after July 1, 2020. The following VMT impact analysis relative to the Project is provided pursuant to CEQA Guidelines Appendix G.

7.1 Project Vehicle Miles Traveled Analysis Methodology and Analysis

The calculation of VMT of any project is the number of project-generated trips multiplied by the travel length of each trip. Project-generated daily VMT was estimated separately for each Project trip type, based on Project-specific data for average construction activity for the duration of the construction effort.

Average daily construction activity was used for the VMT analysis to provide a more accurate analysis of the total Project impacts to the regional roadway system. It is anticipated that the average daily construction workforce would be 471 workers. It is assumed that trucking activity to/from the Project site would remain at a consistent level throughout the duration of construction. To develop a more accurate VMT estimate for trucks, no PCE factor was applied.

Table 13. Project Average Construction Trip Generation Estimates

Vehicle Type	Daily Quantity	Daily Trips[1/]
Workers	471	754
Delivery Vehicles	36	72
On-Site Trucks	24	48
	Total Trips	**874**

1/ A vehicle occupancy rate of 1.25 was applied to worker trips.

7.1.1 Daily Worker Commute Trips

As presented in Table 13, the average construction workforce trip generation is expected to be approximately 754 trips per day. Additionally, the origins of employee commuting trips, i.e., where employees reside, has been researched and estimated using United States Census Population Data. Project-generated trips have been reduced by a factor of 1.25 for car-pooling. The weighted average one-way commuting trip length is 35.7 miles. Table 14 identifies communities that are sources of employees, their commuting trip length, as well as daily and total Project VMT.

Table 14. Worker Vehicle Miles Traveled

Town/City	Distance to Site (miles)[1/]	Project Worker Population by City[2/]	Construction Inbound Worker Trips[3/]	Construction Outbound Worker Trips[3/]	Total Daily Worker Trips (D + E)	Daily Worker Vehicle Miles Traveled (B x F)	Number of Workdays per week	Construction Duration (weeks)[4/]	Total Worker Vehicle Miles Traveled (G x H x I)
A	B	C	D	E	F	G	H	I	J
Mojave, CA	14	1.37%	5	5	10	140	5	143	100,100
Rosamond, CA	13	4.06%	15	15	30	390	5	143	278,850
Lancaster, CA	25	34.11%	129	129	258	6,450	5	143	4,611,750
Palmdale, CA	35	20.24%	76	76	152	5,320	5	143	3,803,800
Sun Village, CA	46	3.09%	12	12	24	1,104	5	143	789,360
Boron, CA	44	0.29%	1	1	2	88	5	143	62,920
Gorman, CA	45	0.51%	2	2	4	180	5	143	128,700
California City, CA	29	2.12%	8	8	16	464	5	143	331,760
Tehachapi, CA	18	5.78%	22	22	44	792	5	143	566,280
Bakersfield, CA	56	28.43%	107	107	214	11,984	5	143	8,568,560
	Total	**100.00%**	**377**	**377**	**754**	**26,912**			**19,242,080**

1/ Approximate distance between the Project site and the town/city population centroid.
2/ Proportion of workers travelling to/from a given town/city. Based on United States Census population data and assumes a maximum of one-hour drivetime to/from the Project site. Census tracts in unincorporated areas were assigned to the nearest population centroid.
3/ 377 average construction worker trips are taken from Table 13 and account for a 1.25 carpool reduction factor.
4/ Assumes a 34-month construction schedule, provided by the Project proponent.

7.1.2 Daily Truck Haul Trips

As presented in Table 13, average daily construction truck haul delivery trip generation is estimated at 72 daily trips for the Project. Additionally, the origins of truck haul trips were assumed to be similar to workforce commuting patterns as discussed in Section 7.1.1. Table 15 identifies communities that are sources of truck haul delivery trips, their trip length, as well as daily and total Project truck haul VMT.

Table 15. Haul Truck Vehicle Miles Traveled

Town/City	Distance to Site (miles)[1/]	Project Worker Population by City[2/]	Construction Inbound Haul Truck Trips[3/]	Construction Outbound Haul Truck Trips[3/]	Total Daily Haul Truck Trips (D + E)	Daily Haul Truck Vehicle Miles Traveled (B x F)	Number of Workdays per week	Construction Duration (weeks)[4/]	Total Haul Truck Vehicle Miles Traveled (G x H x I)
A	B	C	D	E	F	G	H	I	J
Mojave, CA	14	1.37%	1	1	2	28	5	143	20,020
Rosamond, CA	13	4.06%	2	2	4	52	5	143	37,180
Lancaster, CA	25	34.11%	12	12	24	600	5	143	429,000
Palmdale, CA	35	20.24%	7	7	14	490	5	143	350,350
Sun Village, CA	46	3.09%	1	1	2	92	5	143	65,780
Boron, CA	45	0.51%	0	0	0	0	5	143	0
Gorman, CA	44	0.29%	0	0	0	0	5	143	0
California City, CA	29	2.12%	1	1	2	58	5	143	41,470
Tehachapi, CA	18	5.78%	2	2	4	72	5	143	51,480
Bakersfield, CA	56	28.43%	10	10	20	1,120	5	143	800,800
Total	**35.7**	**100.00%**	**36**	**36**	**72**	**2,512**	**NA**	**NA**	**1,796,080**

1/ Approximate distance between the Project site and the town/city population centroid.
2/ Proportion of trucks travelling to/from a given town/city. Based on United States Census population data and assumes a maximum of one-hour drivetime to/from the Project site. Census tracts in unincorporated areas were assigned to the nearest population centroid.
3/ 36 average daily construction haul truck trips are taken from Table 13.
4/ Assumes a 34-month construction schedule, provided by Project proponent.

7.1.3 Daily On-Site Truck Trips

As shown in Table 13, the average daily on-site construction truck trip generation is estimated at 24 entering trucks and 24 exiting trucks for a total of 48 truck trips per day for the Project. Based on construction operations data provided by the Applicant, on-site truck trips are expected to enter the public roadway system up to 2 times a week. Additionally, the average length of truck haul trips was assumed to be 5 miles to provide a conservative estimate of trucks entering the public roadway system between Project parcels. Table 16 identifies communities that are sources of truck haul trips, their trip length, as well as daily and total Project VMT.

Table 16. On-Site Truck Vehicle Miles Traveled

Town/City	Distance to Site (miles)[1/]	Construction Inbound On-Site Truck Trips[2/]	Construction Outbound On-Site Truck Trips[2/]	Total Daily On-Site Truck Trips (C + D)	Daily On-Site Truck Vehicle Miles Traveled (B x E)	Number of Workdays per week[3/]	Construction Duration (weeks)[4/]	Total On-Site Truck Vehicle Miles Traveled (F x G x H)
A	B	C	D	E	F	G	H	I
Local Roadways	5	24	24	48	240	2	143	68,640

1/ Assumes that On-Site Truck Trips would travel along local roadways in the vicinity of the Project site and travel a maximum of 5 miles before returning to the site.
2/ 24 average daily construction on-site truck trips are taken from Table 13.
3/ Assumes each truck would impact the public roadway system up to 2 times a week for the duration of the project.
4/ Assumes a 34-month construction schedule, provided by Project proponent.

7.2 Project-Generated Vehicle Miles Traveled Analysis Results

As discussed previously, the Project is estimated to generate an average weekday daily VMT of approximately 26,912 miles for worker commuting trips, 2,512 miles for truck haul trips, and an additional 240 miles related to on-site truck trips (which would only occasionally access the public roadway system). The 26,912 miles for commute trips was divided by the average number of anticipated workers on site Project construction (471 workers), resulting in a daily per capita VMT of 57.1 miles. The number of daily haul truck trips (72) was divided by two (one worker driving two one-way trips to and from the Project site). The total daily haul truck VMT of 2,512 miles was then divided by 36 drivers, resulting in a daily per capita VMT of 69.8 miles for haul truck trips. The number of daily on-site truck trips (48) was divided by two (one worker driving two one-way trips to and from the Project Site). The total daily on-site truck VMT of 240 miles was then divided by 24 drivers, resulting in a daily per capita VMT of 10 miles for on-site truck trips.

The total construction-related Project VMT impacts were analyzed by multiplying the daily VMT by the estimated number of working days in the Project. The Project construction phase is expected to last for approximately 34 months (147 weeks), with an assumed 5-day work week for construction worker commuting and truck haul trips. On-site trucks are expected to impact the public roadway system up to two times per week while traveling between Project parcels. Based on these assumptions, the total constructed-related VMT for worker commuting trips is estimated to be 19,242,080 miles, with 1,796,080 miles traveled for truck haul trips, and an additional 68,640 miles travel for on-site trucks. This would result in a total net increase of 21,106,800 VMT at the site over an approximately 34-month construction period, given there is minimal VMT generated currently.

The intent of Senate Bills 32 and 743 is to understand the long-term greenhouse gas emissions generated by new developments. The Project's construction-related net increase in VMT is a temporary condition and would not result in long-term greenhouse gas emissions. During the operations and maintenance phase, which is expected to last up to 35 years, the Project site is expected to employ six full-time workers who are anticipated to generate approximately 12 vehicle trips per day. The Office of Planning and Research (2018) guidance indicates that projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. Therefore, based on this guidance, the Project is expected to result in a less-than-significant impact to VMT. Additionally, it is anticipated that the Project would actually reduce greenhouse gas emissions and provide a more secure energy future. Diversifying energy production sources is both critical as well as a stated goal of California and the United States.

8.0 MANAGEMENT MEASURES

As part of the Project, a Construction Traffic Management Plan (CTMP) will be prepared to minimize potential Project-related traffic impacts in accordance with Best Management Practices. Tehachapi Willow Springs Road is a high-speed roadway that would serve as the primary access to the Project site driveways. If requested by Caltrans or Kern County Public Works staff, temporary construction zone speed restrictions may be implemented along Tehachapi Willow Springs Road to encourage motorists to slow down through the Study Area. The CTMP will include variable message boards and additional signage along Tehachapi Willow Springs Road alerting motorists of the increased truck

turning activity in the vicinity of the Project site and to watch for slow moving traffic. The CTMP will also include measures to encourage coordination with Kern County to minimize congestion with neighboring projects. A Traffic Control Plan will also be prepared and attached to the CTMP for Kern County Public Works Department review.

The CTMP would also encourage non-single occupancy vehicle trips and minimize reliance on single-occupant vehicles to reduce single occupancy vehicle trips to and from the Project site.

Prior to construction, the Project is committed to entering into an agreement with the Kern County Public Works Department to ensure that any County roads that are demonstrably damaged by Project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

The Project will work with the Kern County Permits Engineer to obtain all necessary Encroachment Permits for any proposed work within the County road right-of-way. The Project contractor will also work with the Kern County Permits Engineer to comply with all federal, state, and local permit requirements for oversized or overweight vehicle permits.

9.0 CONCLUSIONS

Tetra Tech has evaluated the potential traffic impacts associated with the temporary increase in traffic generated by peak construction activities for the Project. The Study Area evaluated in this TIA includes six intersections and five roadway segments. The analysis indicates that ample capacity is available within the Study Area to support the peak construction workforce levels associated with the Project. Study Area roadways operate well below capacity at LOS D or better under existing and future year conditions with or without the Project. Peak construction activities are currently anticipated to occur for a period of approximately 3 months. The remainder of the Project construction period is anticipated to generate fewer vehicle trips and, consequently, less delays at Study Area roadways and intersections.

The Project is estimated to result in temporary VMT of approximately 21,106,800 VMPT during construction efforts. However, once completed, the operation and maintenance phase of the Project is expected to generate approximately 12 vehicle trips per day and would result in a less-than-significant transportation impact. Traffic-related impacts resulting from decommissioning of the Project are expected to be similar to or less than those experienced during construction.

While the Study Area intersections are anticipated to operate below capacity at acceptable LOS D or better during both peak hours with or without the Project's construction activities, a CTMP will be prepared to minimize potential Project-related traffic impacts during construction to be consistent with Best Management Practices. As part of the CTMP, variable message boards and additional signage along Tehachapi Willow Springs Road will be included to alert motorists of the increased truck turning activity in the vicinity of the Project site and to watch for slow-moving traffic.

10.0 REFERENCES

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FIGURES

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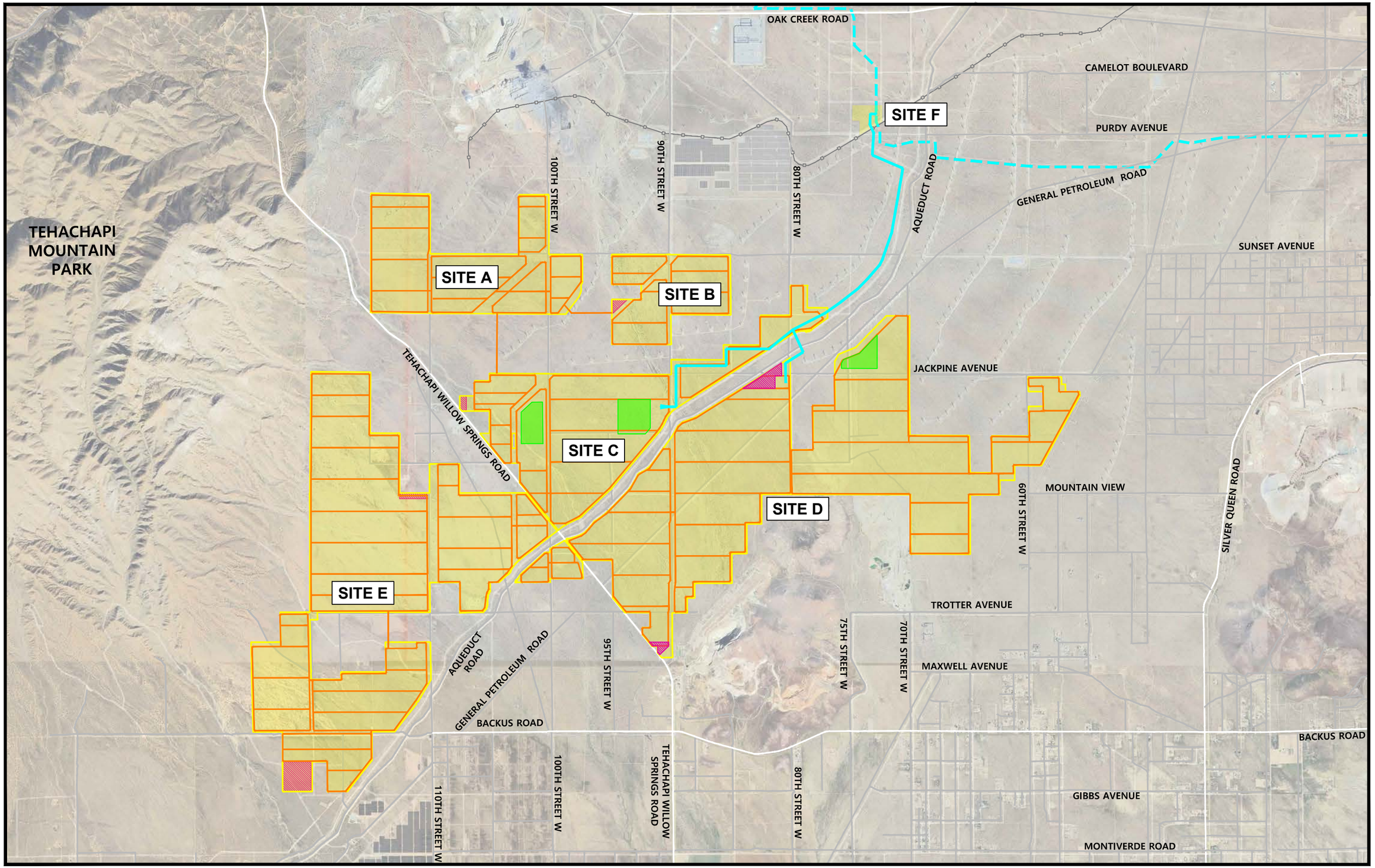


TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

PROJECT SITE LOCUS

FIGURE
1

COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

TEHACHAPI MOUNTAIN RANGE
TEHACHAPI WILLOW SPRINGS ROAD
OAK CREEK ROAD
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
100TH STREET W
90TH STREET W
80TH STREET W
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD
14

1 Tehachapi Willow Springs Rd @ Backus Rd
(1) 1 (100) 80 (79) 38
(38) 57 (0) 1 (9) 9
(0) 0 (0) 0 (2) 0
(0) 0 (64) 131 (8) 9

2 SR-14 SB Ramps @ Backus Rd
(4) 27 (0) 0 (12) 11
(45) 90 (4) 7
(25) 28 (100) 55

3 SR-14 NB Ramps @ Backus Rd
(2) 6 (12) 19
(9) 11 (27) 28
(36) 79 (0) 0 (8) 3

4 Tehachapi Willow Springs Rd @ Old Creek Rd
(190) 103 (63) 17
(25) 83 (4) 1
(93) 197 (4) 2

5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway
(0) 0 (180) 119 (0) 0
(0) 0 (0) 0 (0) 0
(0) 0 (0) 0 (0) 0
(0) 0 (102) 188 (0) 0

6 Tehachapi Willow Springs Rd @ Site D Driveways
(0) 0 (180) 119 (0) 0
(0) 0 (0) 0 (0) 0
(0) 0 (0) 0 (0) 0
(0) 0 (102) 188 (0) 0

TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

2024 EXISTING PEAK HOUR TRAFFIC VOLUMES

FIGURE
2

TO/FROM NORTH
VIA CA-58
34%

TO/FROM NORTH
VIA CA-14
3%

TO/FROM
MOJAVE
1%

OAK CREEK ROAD

TEHACHAPI WILLOW SPRINGS ROAD

SITE F

SITE A

SITE B

34%

SITE C

SITE D

SITE E

4%

66%

29%

BACKUS ROAD

37%

TEHACHAPI WILLOW SPRINGS ROAD

TO/FROM
ROSAMOND
3%

ROSAMOND BOULEVARD

ROSAMOND BOULEVARD

TO/FROM SOUTH
VIA TEHACHAPI WILLOW
SPRINGS ROAD
34%

TO/FROM SOUTH
VIA CA-14
25%

SITE A
SITE B
SITE C
SITE D
SITE E
SITE F

COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
PROJECT BOUNDARY
REGIONAL TRIP DISTRIBUTION

TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

REGIONAL TRIP DISTRIBUTION

FIGURE
3

COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

TEHACHAPI MOUNTAIN RANGE
OAK CREEK ROAD
TEHACHAPI WILLOW SPRINGS ROAD
100TH STREET W
90TH STREET W
80TH STREET W
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD

1 Tehachapi Willow Springs Rd @ Backus Rd
(0) 0 (20) 217 (16) 169
(169) 16 (0) 0 (0) 0
(0) 0 (0) 0 (0) 0
(0) 0 (217) 20 (0) 0

2 SR-14 SB Ramps @ Backus Rd
(23) 3 (0) 0 (0) 0
(146) 13 (0) 0
(3) 23 (13) 146

3 SR-14 NB Ramps @ Backus Rd
(0) 0 (0) 0
(3) 23 (0) 0
(146) 13 (0) 0 (0) 0

4 Tehachapi Willow Springs Rd @ Old Creek Rd
(199) 18 (0) 0
(0) 0 (0) 0
(18) 199 (0) 0

5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway
(63) 6 (75) 6 (61) 6
(6) 61 (0) 0 (11) 119
(6) 63 (0) 0 (11)121
(121) 11 (6) 75 (119) 11

6 Tehachapi Willow Springs Rd @ Site D Driveways
(2) 0 (22) 240 (73) 6
(6) 73 (0) 0 (13) 142
(0) 2 (0) 0 (1) 4
(4) 1 (240) 22 (142) 13

TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

2026 PEAK CONSTRUCTION PEAK HOUR TRIP GENERATION

FIGURE
4

COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

TEHACHAPI MOUNTAIN RANGE
OAK CREEK ROAD
TEHACHAPI WILLOW SPRINGS ROAD
100TH STREET W
90TH STREET W
80TH STREET W
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD

1 Tehachapi Willow Springs Rd @ Backus Rd
(1) 1 (120) 297 (95) 207
(207) 73 (0) 1 (9) 9
(0) 0 (0) 0 (2) 0
(0) 0 (281) 151 (8) 9

2 SR-14 SB Ramps @ Backus Rd
(27) 30 (0) 0 (12) 11
(191) 103 (4) 7
(28) 51 (113) 201

3 SR-14 NB Ramps @ Backus Rd
(2) 6 (12) 19
(12) 34 (27) 28
(182) 92 (0) 0 (8) 3

4 Tehachapi Willow Springs Rd @ Old Creek Rd
(389) 121 (63) 17
(25) 83 (4) 1
(111) 396 (4) 2

5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway
(63) 6 (255) 125 (67) 6
(6) 61 (0) 0 (11) 119
(6) 63 (0) 0 (11) 121
(121) 11 (108) 263 (119) 11

6 Tehachapi Willow Springs Rd @ Site D Driveways
(2) 0 (202) 359 (73) 6
(6) 73 (0) 0 (13) 142
(0) 2 (0) 0 (1) 4
(4) 1 (342) 210 (142) 13

TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

EXISTING PLUS PEAK CONSTRUCTION PEAK HOUR TRAFFIC VOLUMES

FIGURE
5

COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
X STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

1 Pacific Steel Group Steel Mill
2 TNRE Organic Waste to Energy Facility

TEHACHAPI MOUNTAIN RANGE

OAK CREEK ROAD
TEHACHAPI WILLOW SPRINGS ROAD
100TH STREET W
90TH STREET W
80TH STREET W
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD

1 Tehachapi Willow Springs Rd @ Backus Rd
(0) 0 (0) 0 (0) 0
(0) 0
(0) 0
(0) 0
(0) 0 (0) 0 (0) 0 (0)
(0) 0
(0) 0
(0) 0

3 SR-14 NB Ramps @ Backus Rd
(32) 68
(34) 265
(0) 0
(103) 96
(0) 0 (0) 0 (0) 65 (243)

5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway
(0) 0 (0) 0 (0) 0
(0) 0
(0) 0
(0) 0
(0) 0 (0) 0 (0) 0 (0)

2 SR-14 SB Ramps @ Backus Rd
(0) 0 (0) 0 (0) 0 (95) 72
(2) 44
(32) 221
(8) 24
(0) 0

4 Tehachapi Willow Springs Rd @ Old Creek Rd
(0) 0 (0) 0
(0) 0
(0) 0
(0) 0 (0) 0

6 Tehachapi Willow Springs Rd @ Site D Driveways
(0) 0 (0) 0 (0) 0
(0) 0
(0) 0
(0) 0
(0) 0 (0) 0 (0) 0 (0)

TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

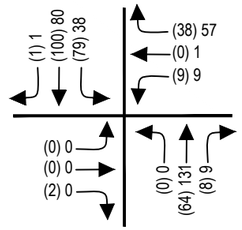
CUMULATIVE PROJECT LOCATIONS AND PEAK HOUR TRAFFIC VOLUMES

FIGURE
6

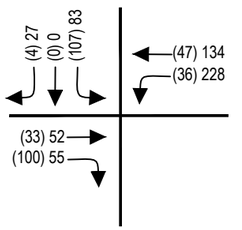
COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

TEHACHAPI MOUNTAIN RANGE
OAK CREEK ROAD
TEHACHAPI WILLOW SPRINGS ROAD
100TH STREET W
90TH STREET W
80TH STREET W
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD

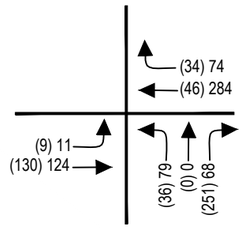
1 Tehachapi Willow Springs Rd @ Backus Rd



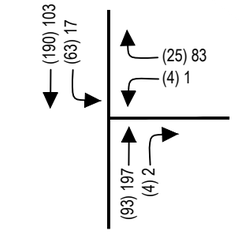
2 SR-14 SB Ramps @ Backus Rd



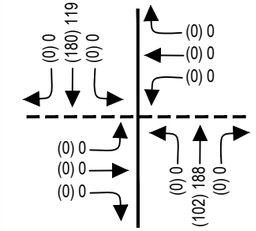
3 SR-14 NB Ramps @ Backus Rd



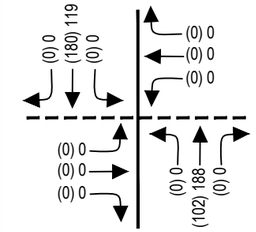
4 Tehachapi Willow Springs Rd @ Old Creek Rd



5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway



6 Tehachapi Willow Springs Rd @ Site D Driveways



TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

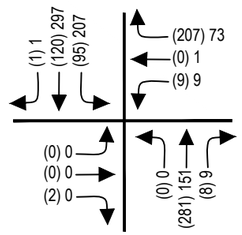
2026 CUMULATIVE CONDITION PEAK HOUR TRAFFIC VOLUMES

FIGURE
7

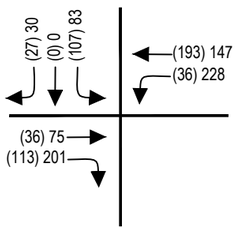
COUNTY ROADWAYS
LOCAL ROADWAYS
STATE ROADWAYS
RAILROAD
EXISTING GEN-TIE LINE
PROJECT BOUNDARY
PROJECT ACCESS ROADS
STUDY INTERSECTIONS
(#) # (AM) PM PEAK HOUR VOLUMES

TEHACHAPI MOUNTAIN RANGE
OAK CREEK ROAD
TEHACHAPI WILLOW SPRINGS ROAD
100TH STREET W
90TH STREET W
80TH STREET W
AQUEDUCT ROAD
CAMELOT BOULEVARD
PURDY AVENUE
GENERAL PETROLEUM ROAD
JACKPINE AVENUE
MOUNTAIN VIEW
60TH STREET W
SILVER QUEEN ROAD
TROTTER AVENUE
75TH STREET W
MAXWELL AVENUE
95TH STREET W
AQUEDUCT ROAD
BACKUS ROAD
BACKUS ROAD
110TH STREET W
100TH STREET W
TEHACHAPI WILLOW SPRINGS ROAD
80TH STREET W
70TH STREET W
GIBBS AVENUE
MONTIVERDE ROAD
GENERAL PETROLEUM ROAD
14
14

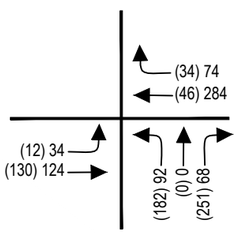
1 Tehachapi Willow Springs Rd @ Backus Rd



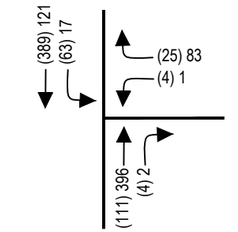
2 SR-14 SB Ramps @ Backus Rd



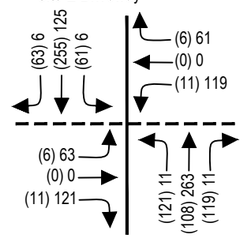
3 SR-14 NB Ramps @ Backus Rd



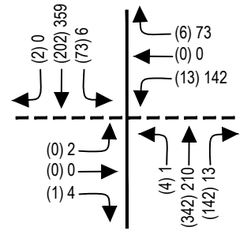
4 Tehachapi Willow Springs Rd @ Old Creek Rd



5 Tehachapi Willow Springs Rd @ Site A/B/C Driveway and Site E Driveway



6 Tehachapi Willow Springs Rd @ Site D Driveways



TETRA TECH

Discovery Solar PV and Storage Project
Kern County, CA

FIGURE
8

2026 CUMULATIVE PLUS PEAK CONSTRUCTION PEAK HOUR TRAFFIC VOLUMES

APPENDIX A: TRAFFIC COUNT DATA

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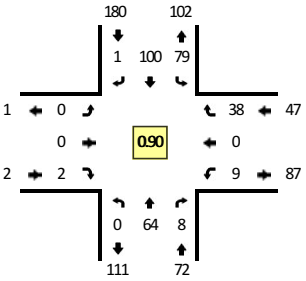
Type of peak hour being reported: Intersection Peak

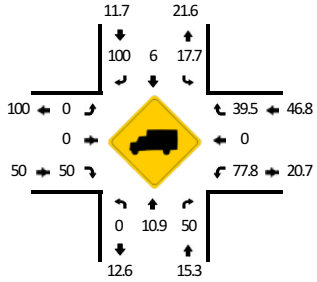
Method for determining peak hour: Total Entering Volume

LOCATION: Tehachapi Willow Springs Rd -- Backus Rd
CITY/STATE: Kern, CA

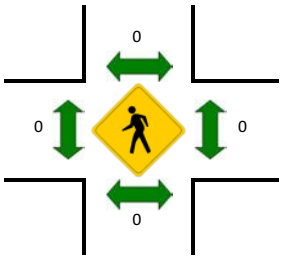
QC JOB #: 16537409
DATE: Tue, Jun 4 2024

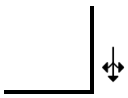
Peak-Hour: 6:45 AM -- 7:45 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

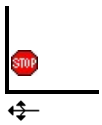


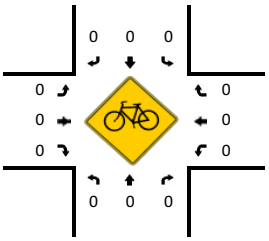


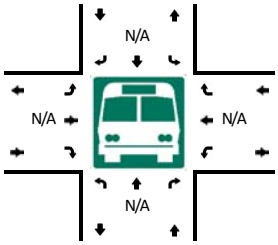
TRUE DATA TO IMPROVE MOBILITY

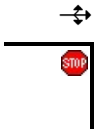


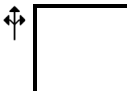


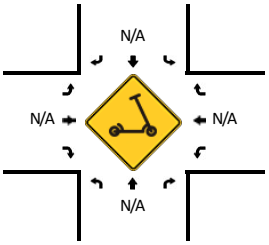












5-Min Count Period Beginning At	Tehachapi Willow Springs Rd (Northbound)				Tehachapi Willow Springs Rd (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	3	0	0	3	5	0	0	0	0	0	0	0	0	2	0	13	
6:05 AM	0	4	0	0	3	10	1	0	0	1	0	0	0	0	1	0	20	
6:10 AM	0	2	0	0	7	14	0	0	0	0	1	0	0	1	1	0	26	
6:15 AM	0	2	0	0	4	6	0	0	0	0	0	0	1	0	1	0	14	
6:20 AM	0	1	1	0	3	5	0	0	0	0	0	0	1	0	3	0	14	
6:25 AM	0	4	0	0	3	6	0	0	0	0	0	0	1	0	1	0	15	
6:30 AM	0	4	1	0	5	15	0	0	1	0	0	0	0	1	6	0	33	
6:35 AM	0	1	2	0	7	5	0	0	0	0	0	0	0	0	4	0	19	
6:40 AM	0	9	0	0	7	6	1	0	0	0	0	0	2	0	2	0	27	
6:45 AM	0	5	0	0	3	12	0	0	0	0	1	0	2	0	4	0	27	
6:50 AM	0	5	0	0	6	8	0	0	0	0	1	0	2	0	4	0	26	
6:55 AM	0	7	1	0	5	8	0	0	0	0	0	0	0	0	2	0	23	257
7:00 AM	0	7	0	0	3	15	1	0	0	0	0	0	2	0	5	0	33	277
7:05 AM	0	9	0	0	5	5	0	0	0	0	0	0	2	0	0	0	21	278
7:10 AM	0	5	1	0	2	6	0	0	0	0	0	0	1	0	3	0	18	270
7:15 AM	0	3	1	0	8	8	0	0	0	0	0	0	0	0	2	0	22	278
7:20 AM	0	3	0	0	11	11	0	0	0	0	0	0	0	0	2	0	27	291
7:25 AM	0	2	1	0	8	5	0	0	0	0	0	0	0	0	4	0	20	296
7:30 AM	0	7	0	0	11	11	0	0	0	0	0	0	0	0	3	0	32	295
7:35 AM	0	3	2	0	11	5	0	0	0	0	0	0	0	0	2	0	23	299
7:40 AM	0	8	2	0	6	6	0	0	0	0	0	0	0	0	7	0	29	301
7:45 AM	0	5	0	0	9	4	0	0	0	0	0	0	0	0	4	0	22	296
7:50 AM	1	4	1	0	3	3	1	0	0	0	0	0	0	0	3	0	16	286
7:55 AM	0	4	0	0	9	9	0	0	1	1	0	0	2	0	2	0	28	291
8:00 AM	0	7	0	0	5	2	0	0	0	0	0	0	0	0	2	0	16	274
8:05 AM	0	5	0	0	5	6	0	0	0	0	0	0	0	0	1	0	17	270
8:10 AM	1	4	0	0	1	2	0	0	0	0	0	0	2	0	2	0	12	264
8:15 AM	0	8	0	0	3	5	0	0	0	0	0	0	0	0	2	0	18	260
8:20 AM	0	3	0	0	2	6	1	0	0	1	0	0	0	0	3	0	16	249
8:25 AM	0	5	1	0	1	0	0	0	0	1	0	0	0	0	3	0	11	240
8:30 AM	0	4	1	0	1	12	0	0	0	0	0	0	0	0	3	0	21	229
8:35 AM	0	1	0	0	4	8	0	0	0	0	0	0	0	0	4	0	17	223
8:40 AM	0	5	0	0	5	9	0	0	0	0	1	0	2	1	3	0	26	220
8:45 AM	0	3	0	0	6	5	0	0	0	0	0	0	0	0	5	0	19	217
8:50 AM	0	4	0	0	9	3	0	0	1	0	0	0	0	0	3	0	20	221
8:55 AM	0	5	0	0	8	6	0	0	0	0	0	0	0	0	1	0	20	213

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	72	16	0	112	88	0	0	0	0	0	0	0	0	48	0	336
Heavy Trucks	0	4	8		16	4	0		0	0	0		0	0	24		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Tehachapi Willow Springs Rd -- Backus Rd

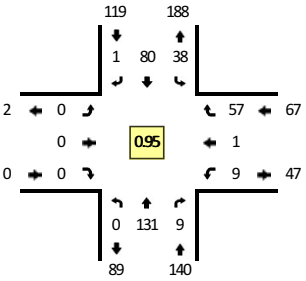
CITY/STATE: Kern, CA

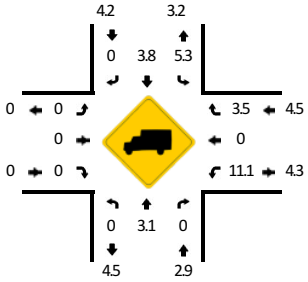
QC JOB #: 16537410

DATE: Tue, Jun 4 2024

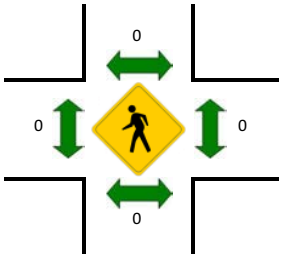
Peak-Hour: 4:00 PM -- 5:00 PM

Peak 15-Min: 4:40 PM -- 4:55 PM

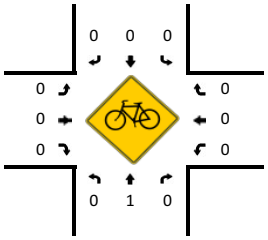


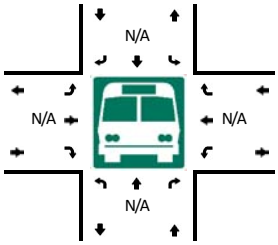


TRUE DATA TO IMPROVE MOBILITY

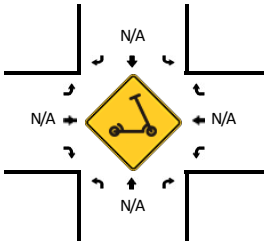












5-Min Count Period Beginning At	Tehachapi Willow Springs Rd (Northbound)				Tehachapi Willow Springs Rd (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	14	1	0	5	13	0	0	0	0	0	0	1	0	4	0	38	
4:05 PM	0	6	1	0	7	9	0	0	0	0	0	0	0	0	3	0	26	
4:10 PM	0	11	0	0	2	5	0	0	0	0	0	0	0	0	1	0	19	
4:15 PM	0	9	1	0	5	5	0	0	0	0	0	0	0	0	4	0	24	
4:20 PM	0	9	0	0	2	3	0	0	0	0	0	0	2	0	6	0	22	
4:25 PM	0	18	2	0	6	7	0	0	0	0	0	0	0	0	5	0	38	
4:30 PM	0	7	0	0	1	4	1	0	0	0	0	0	1	0	6	0	20	
4:35 PM	0	14	2	0	1	2	0	0	0	0	0	0	2	0	4	0	25	
4:40 PM	0	5	0	0	1	12	0	0	0	0	0	0	1	1	11	0	31	
4:45 PM	0	10	2	0	4	5	0	0	0	0	0	0	0	0	3	0	24	
4:50 PM	0	12	0	0	1	10	0	0	0	0	0	0	1	0	7	0	31	
4:55 PM	0	16	0	0	3	5	0	0	0	0	0	0	1	0	3	0	28	326
5:00 PM	0	13	0	0	2	2	0	0	0	0	0	0	0	0	6	0	23	311
5:05 PM	0	6	0	0	7	7	0	0	0	0	0	0	0	0	8	0	28	313
5:10 PM	1	7	0	0	2	4	0	0	0	0	0	0	0	0	10	0	24	318
5:15 PM	0	10	0	0	4	2	0	0	0	0	0	0	0	0	5	0	21	315
5:20 PM	0	6	0	0	2	9	0	0	0	0	0	0	0	0	7	0	24	317
5:25 PM	0	5	0	0	2	10	0	0	0	0	0	0	0	1	4	0	22	301
5:30 PM	0	6	0	0	3	4	0	0	0	1	0	0	1	0	7	0	22	303
5:35 PM	0	11	0	0	1	8	0	0	1	0	0	0	1	0	6	0	28	306
5:40 PM	0	6	0	0	0	4	0	0	0	0	0	0	1	0	2	0	13	288
5:45 PM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	4	0	12	276
5:50 PM	0	4	1	0	2	1	0	0	0	0	0	0	0	0	2	0	10	255
5:55 PM	0	2	0	0	1	5	0	0	0	0	0	0	0	1	8	0	17	244
6:00 PM	0	7	0	0	2	4	0	0	0	0	0	0	0	0	4	0	17	238
6:05 PM	0	6	0	0	1	2	0	0	0	1	0	0	0	0	4	0	14	224
6:10 PM	0	3	0	0	3	6	0	0	0	0	0	0	0	0	4	0	16	216
6:15 PM	0	6	0	0	2	2	0	0	0	0	0	0	0	0	1	0	11	206
6:20 PM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	1	0	9	191
6:25 PM	0	7	0	0	0	5	0	0	0	0	0	0	0	2	4	0	18	187
6:30 PM	0	6	0	0	2	3	0	0	0	0	0	0	0	0	3	0	14	179
6:35 PM	0	6	0	0	0	7	0	0	0	0	0	0	0	0	5	0	18	169
6:40 PM	0	5	0	0	0	0	0	0	0	0	0	0	1	0	2	0	8	164
6:45 PM	0	7	0	0	2	2	0	0	0	0	0	0	0	0	4	0	15	167
6:50 PM	1	4	0	0	2	6	0	0	0	0	0	0	0	0	5	0	18	175
6:55 PM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	4	0	12	170

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	108	8	0	24	108	0	0	0	0	0	0	8	4	84	0	344
Heavy Trucks	0	0	0		4	4	0		0	0	0		0	0	8		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

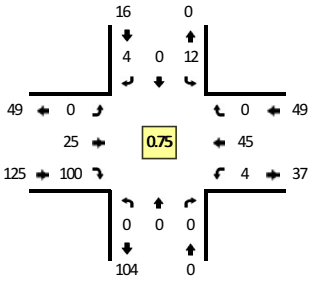
Type of peak hour being reported: Intersection Peak

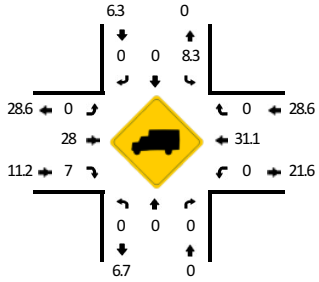
Method for determining peak hour: Total Entering Volume

LOCATION: CA 14 SB Ramps -- Backus Rd
CITY/STATE: Mojave, CA

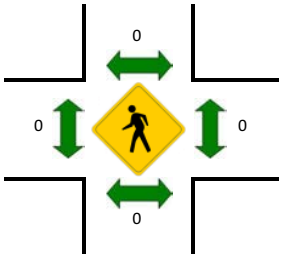
QC JOB #: 16537415
DATE: Tue, Jun 4 2024

Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

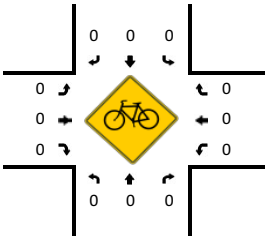


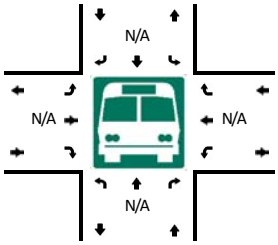


TRUE DATA TO IMPROVE MOBILITY

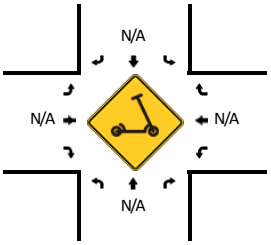












5-Min Count Period Beginning At	CA 14 SB Ramps (Northbound)				CA 14 SB Ramps (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	0	9	0	1	2	0	0	12	
6:05 AM	0	0	0	0	0	0	0	0	0	1	7	0	0	2	0	0	10	
6:10 AM	0	0	0	0	0	0	1	0	0	2	3	0	0	4	0	0	10	
6:15 AM	0	0	0	0	0	1	1	0	0	2	3	0	0	3	0	0	10	
6:20 AM	0	0	0	0	0	0	0	0	0	4	10	0	0	4	0	0	18	
6:25 AM	0	0	0	0	0	0	2	0	0	0	3	0	0	8	0	0	13	
6:30 AM	0	0	0	0	0	0	0	0	0	6	3	0	0	3	0	0	12	
6:35 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	3	0	0	8	
6:40 AM	0	0	0	0	0	0	0	0	0	2	4	0	0	8	0	1	15	
6:45 AM	0	0	0	0	0	0	0	0	0	3	10	0	0	2	0	0	15	
6:50 AM	0	0	0	0	0	0	0	0	0	2	5	0	0	4	0	0	11	
6:55 AM	0	0	0	0	0	1	0	0	0	2	4	0	0	3	0	0	10	144
7:00 AM	0	0	0	0	0	0	0	0	0	5	2	0	0	3	0	0	10	142
7:05 AM	0	0	0	0	0	0	1	0	0	4	8	0	0	4	0	0	17	149
7:10 AM	0	0	0	0	1	0	1	0	0	0	5	0	0	3	0	0	10	149
7:15 AM	0	0	0	0	1	0	0	0	0	1	4	0	1	4	0	0	11	150
7:20 AM	0	0	0	0	2	0	0	0	0	1	8	0	1	6	0	0	18	150
7:25 AM	0	0	0	0	2	0	0	0	0	2	11	0	2	4	0	0	21	158
7:30 AM	0	0	0	0	1	0	0	0	0	6	11	0	0	5	0	0	23	169
7:35 AM	0	0	0	0	0	0	0	0	0	1	15	0	0	3	0	0	19	180
7:40 AM	0	0	0	0	1	0	0	0	0	3	13	0	0	3	0	0	20	185
7:45 AM	0	0	0	0	0	0	1	0	0	2	4	0	0	2	0	0	9	179
7:50 AM	0	0	0	0	1	0	1	0	0	2	8	0	0	5	0	0	17	185
7:55 AM	0	0	0	0	1	0	0	0	0	0	8	0	0	2	0	0	11	186
8:00 AM	0	0	0	0	2	0	0	0	0	3	5	0	0	4	0	0	14	190
8:05 AM	0	0	0	0	0	0	2	0	0	3	6	0	0	0	0	0	11	184
8:10 AM	0	0	0	0	1	0	1	0	0	1	5	0	0	3	0	0	11	185
8:15 AM	0	0	0	0	0	0	2	0	0	4	3	0	0	5	0	0	14	188
8:20 AM	0	0	0	0	0	0	1	0	0	1	2	0	0	4	0	0	8	178
8:25 AM	0	0	0	0	0	0	1	0	0	6	4	0	1	4	0	0	16	173
8:30 AM	0	0	0	0	0	0	1	0	0	4	3	0	0	4	0	0	12	162
8:35 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	6	0	0	8	151
8:40 AM	0	0	0	0	0	0	1	0	0	3	6	0	0	9	0	0	19	150
8:45 AM	0	0	0	0	0	0	1	0	0	3	6	0	0	5	0	0	15	156
8:50 AM	0	0	0	0	3	1	1	0	0	2	9	0	0	2	0	0	18	157
8:55 AM	0	0	0	0	1	0	1	0	0	4	4	0	0	9	0	0	19	165

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	0	0	0	36	148	0	8	48	0	0	252
Heavy Trucks	0	0	0		0	0	0		0	12	16		0	12	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

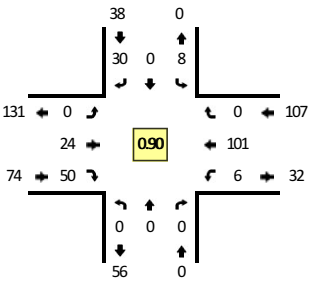
Type of peak hour being reported: Intersection Peak

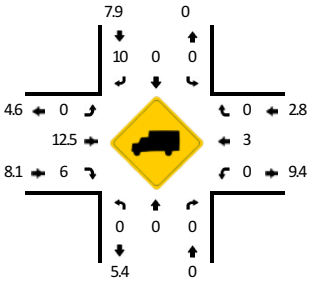
Method for determining peak hour: Total Entering Volume

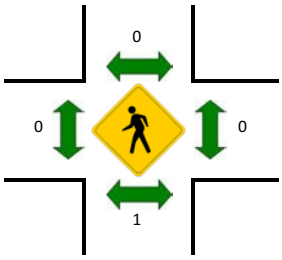
LOCATION: CA 14 SB Ramps -- Backus Rd
CITY/STATE: Mojave, CA

QC JOB #: 16537416
DATE: Tue, Jun 4 2024

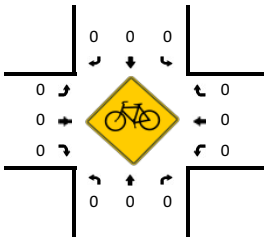
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

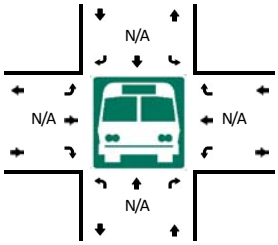




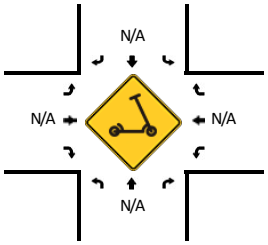












5-Min Count Period Beginning At	CA 14 SB Ramps (Northbound)				CA 14 SB Ramps (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	2	0	0	4	7	0	1	7	0	0	22	
4:05 PM	0	0	0	0	2	0	0	0	0	1	4	0	1	4	0	0	12	
4:10 PM	0	0	0	0	0	0	5	0	0	1	7	0	0	10	0	0	23	
4:15 PM	0	0	0	0	1	0	3	0	0	4	4	0	2	4	0	0	18	
4:20 PM	0	0	0	0	1	0	3	0	0	2	6	0	0	8	0	0	20	
4:25 PM	0	0	0	0	1	0	3	0	0	0	4	0	1	9	0	0	18	
4:30 PM	0	0	0	0	1	0	3	0	0	3	7	0	0	5	0	0	19	
4:35 PM	0	0	0	0	0	0	3	0	0	5	3	0	0	12	0	0	23	
4:40 PM	0	0	0	0	3	0	3	0	0	3	4	0	0	6	0	0	19	
4:45 PM	0	0	0	0	0	0	2	0	0	2	3	0	2	3	0	0	12	
4:50 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	9	0	0	11	
4:55 PM	0	0	0	0	1	0	0	0	0	3	4	0	0	13	0	0	21	218
5:00 PM	0	0	0	0	0	0	4	0	0	0	3	0	1	9	0	0	17	213
5:05 PM	0	0	0	0	0	0	1	0	0	1	3	0	0	13	0	0	18	219
5:10 PM	0	0	0	0	0	1	1	0	0	1	3	0	0	5	0	0	11	207
5:15 PM	0	0	0	0	1	0	0	0	0	2	5	0	1	10	0	0	19	208
5:20 PM	0	0	0	0	1	1	1	0	0	2	2	0	0	9	0	0	16	204
5:25 PM	0	0	0	0	0	0	2	0	0	2	4	0	0	10	0	0	18	204
5:30 PM	0	0	0	0	0	0	2	0	0	1	3	0	1	4	0	0	11	196
5:35 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	0	8	181
5:40 PM	0	0	0	0	0	0	1	0	0	0	5	0	0	9	0	0	15	177
5:45 PM	0	0	0	0	0	0	3	0	0	0	2	0	0	4	0	0	9	174
5:50 PM	0	0	0	0	0	0	1	0	0	0	2	0	2	11	0	0	16	179
5:55 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3	161
6:00 PM	0	0	0	0	1	0	0	0	0	2	4	0	0	7	0	0	14	158
6:05 PM	0	0	0	0	1	0	0	0	0	1	4	0	0	5	0	0	11	151
6:10 PM	0	0	0	0	0	0	0	0	0	1	1	0	1	2	0	0	5	145
6:15 PM	0	0	0	0	0	0	1	0	0	0	3	0	0	4	0	0	8	134
6:20 PM	0	0	0	0	1	0	3	0	0	0	1	0	2	7	0	0	14	132
6:25 PM	0	0	0	0	0	0	1	0	0	1	3	0	0	4	0	0	9	123
6:30 PM	0	0	0	0	1	0	0	0	0	1	2	0	1	8	0	0	13	125
6:35 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	7	0	0	9	126
6:40 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	7	118
6:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	0	8	117
6:50 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	1	7	108
6:55 PM	0	0	0	0	0	0	1	0	0	1	2	0	0	6	0	0	10	115

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	44	0	0	28	68	0	8	88	0	0	244
Heavy Trucks	0	0	0		0	0	8		0	8	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

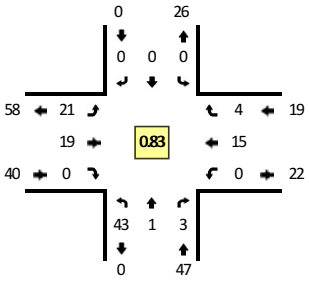
Type of peak hour being reported: Intersection Peak

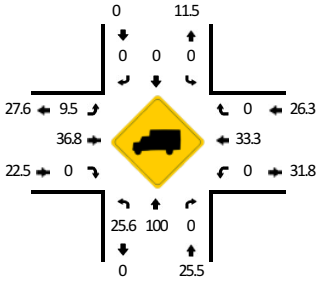
Method for determining peak hour: Total Entering Volume

LOCATION: CA 14 NB Ramps -- Backus Rd
CITY/STATE: Mojave, CA

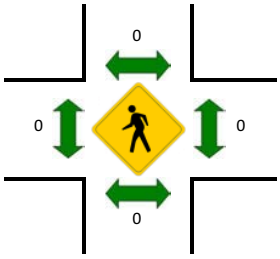
QC JOB #: 16537417
DATE: Tue, Jun 4 2024

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:25 AM -- 8:40 AM

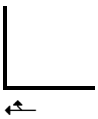


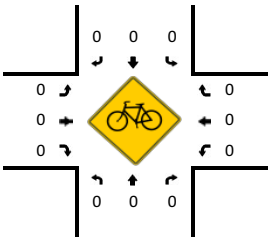


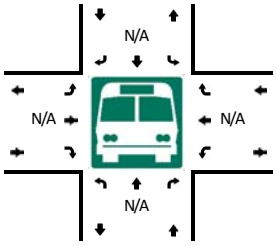
TRUE DATA TO IMPROVE MOBILITY

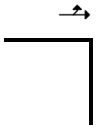


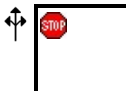


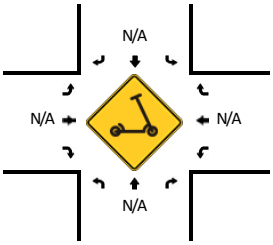












5-Min Count Period Beginning At	CA 14 NB Ramps (Northbound)				CA 14 NB Ramps (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:05 AM	2	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	5	
6:10 AM	4	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	7	
6:15 AM	2	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	5	
6:20 AM	7	0	0	0	0	0	0	0	1	3	0	0	0	0	1	0	12	
6:25 AM	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
6:30 AM	3	0	2	0	0	0	0	0	3	3	0	0	0	0	0	0	11	
6:35 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	5	
6:40 AM	5	0	0	0	0	0	0	0	2	2	0	0	0	4	0	0	13	
6:45 AM	3	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	7	
6:50 AM	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	
6:55 AM	2	0	0	0	0	0	0	0	1	2	0	0	0	1	1	0	7	79
7:00 AM	3	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	8	87
7:05 AM	2	0	1	0	0	0	0	0	1	2	0	0	0	2	0	0	8	90
7:10 AM	4	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	7	90
7:15 AM	2	0	0	0	0	0	0	0	0	3	0	0	0	2	1	0	8	93
7:20 AM	5	0	1	0	0	0	0	0	2	0	0	0	0	2	1	0	11	92
7:25 AM	1	0	0	0	0	0	0	0	1	3	0	0	0	3	0	0	8	96
7:30 AM	5	0	2	0	0	0	0	0	1	6	0	0	0	0	0	0	14	99
7:35 AM	4	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	7	101
7:40 AM	1	0	1	0	0	0	0	0	2	2	0	0	0	0	0	0	6	94
7:45 AM	3	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	7	94
7:50 AM	4	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	6	97
7:55 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	93
8:00 AM	4	0	1	0	0	0	0	0	1	3	0	0	0	0	0	0	9	94
8:05 AM	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	4	90
8:10 AM	3	0	2	0	0	0	0	0	1	2	0	0	0	1	0	0	9	92
8:15 AM	5	0	0	0	0	0	0	0	2	2	0	0	0	0	1	0	10	94
8:20 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	87
8:25 AM	3	0	0	0	0	0	0	0	6	1	0	0	0	2	1	0	13	92
8:30 AM	5	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	9	87
8:35 AM	8	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	10	90
8:40 AM	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	7	91
8:45 AM	3	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	6	90
8:50 AM	2	0	0	0	0	0	0	0	2	3	0	0	0	3	0	0	10	94
8:55 AM	3	0	0	0	0	0	0	0	1	4	0	0	0	6	1	0	15	106

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	4	0	0	0	0	0	0	32	8	0	0	0	16	4	0	128
Heavy Trucks	16	4	0		0	0	0		0	8	0		0	4	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

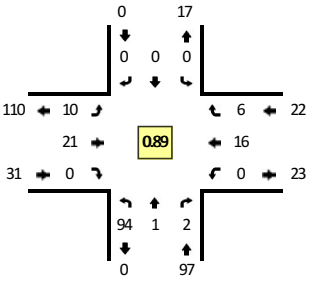
Type of peak hour being reported: Intersection Peak

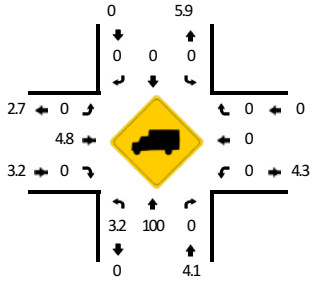
Method for determining peak hour: Total Entering Volume

LOCATION: CA 14 NB Ramps -- Backus Rd
CITY/STATE: Mojave, CA

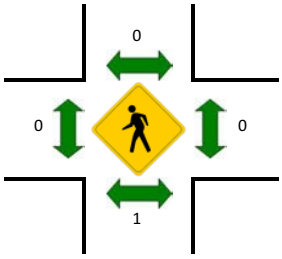
QC JOB #: 16537418
DATE: Tue, Jun 4 2024

Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

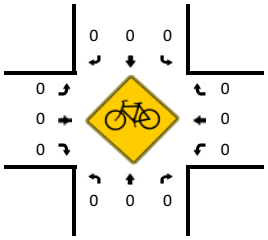


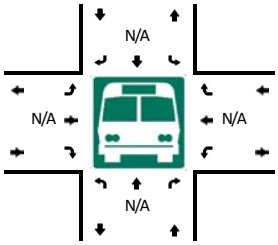


TRUE DATA TO IMPROVE MOBILITY

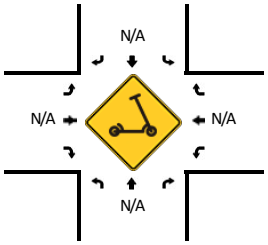












5-Min Count Period Beginning At	CA 14 NB Ramps (Northbound)				CA 14 NB Ramps (Southbound)				Backus Rd (Eastbound)				Backus Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	1	0	0	0	0	0	2	4	0	0	0	3	1	0	16	
4:05 PM	4	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	8	
4:10 PM	7	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	10	
4:15 PM	6	0	0	0	0	0	0	0	1	4	0	0	0	1	0	0	12	
4:20 PM	7	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	10	
4:25 PM	6	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	11	
4:30 PM	6	0	0	0	0	0	0	0	1	5	0	0	0	1	0	0	13	
4:35 PM	12	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	15	
4:40 PM	5	0	0	0	0	0	0	0	2	4	0	0	0	1	2	0	14	
4:45 PM	1	0	1	0	0	0	0	0	0	2	0	0	0	2	1	0	7	
4:50 PM	11	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	14	
4:55 PM	9	0	0	0	0	0	0	0	1	2	0	0	0	3	1	0	16	146
5:00 PM	8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	10	140
5:05 PM	9	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	11	143
5:10 PM	6	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	9	142
5:15 PM	11	0	0	0	0	0	0	0	2	2	0	0	0	0	1	0	16	146
5:20 PM	10	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	14	150
5:25 PM	6	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	9	148
5:30 PM	4	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	7	142
5:35 PM	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	133
5:40 PM	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	127
5:45 PM	5	0	1	0	0	0	0	0	0	0	0	0	0	2	2	0	10	130
5:50 PM	8	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	10	126
5:55 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	113
6:00 PM	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8	111
6:05 PM	4	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	6	106
6:10 PM	3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	5	102
6:15 PM	3	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	9	95
6:20 PM	7	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	9	90
6:25 PM	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	87
6:30 PM	5	0	1	0	0	0	0	0	0	2	0	0	0	1	1	0	10	90
6:35 PM	9	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	12	96
6:40 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	90
6:45 PM	7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	9	89
6:50 PM	3	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	5	84
6:55 PM	7	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	10	91

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	0	4	0	0	0	0	0	20	36	0	0	0	8	8	0	168
Heavy Trucks	8	0	0		0	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

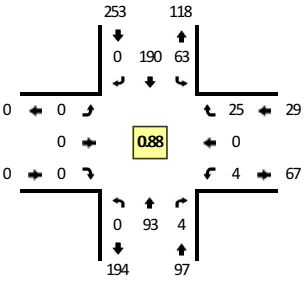
Type of peak hour being reported: Intersection Peak

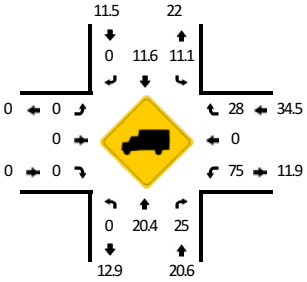
Method for determining peak hour: Total Entering Volume

LOCATION: Tehachapi Willow Springs Rd -- Oak Creek Rd
CITY/STATE: Mountain Meadows, CA

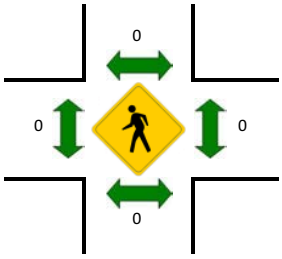
QC JOB #: 16537431
DATE: Tue, Jun 4 2024

Peak-Hour: 6:25 AM -- 7:25 AM
Peak 15-Min: 6:50 AM -- 7:05 AM

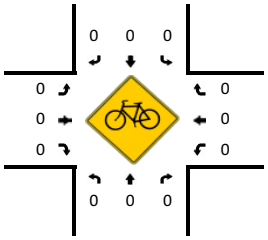


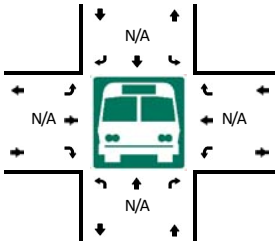


TRUE DATA TO IMPROVE MOBILITY

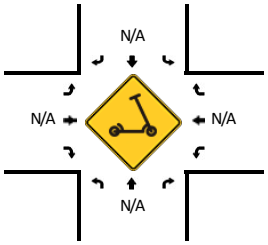












5-Min Count Period Beginning At	Tehachapi Willow Springs Rd (Northbound)				Tehachapi Willow Springs Rd (Southbound)				Oak Creek Rd (Eastbound)				Oak Creek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	1	1	0	5	13	0	0	0	0	0	0	1	0	6	0	27	
6:05 AM	0	9	0	0	4	13	0	0	0	0	0	0	0	0	2	0	28	
6:10 AM	0	4	0	0	2	9	0	0	0	0	0	0	0	0	0	0	15	
6:15 AM	0	6	0	0	4	11	0	0	0	0	0	0	1	0	1	0	23	
6:20 AM	0	2	1	0	4	6	0	0	0	0	0	0	0	0	4	0	17	
6:25 AM	0	2	0	0	4	16	0	0	0	0	0	0	0	0	3	0	25	
6:30 AM	0	8	0	0	11	19	0	0	0	0	0	0	1	0	5	0	44	
6:35 AM	0	5	1	0	4	19	0	0	0	0	0	0	0	0	0	0	29	
6:40 AM	0	7	1	0	5	6	0	0	0	0	0	0	1	0	0	0	20	
6:45 AM	0	6	0	0	4	11	0	0	0	0	0	0	0	0	1	0	22	
6:50 AM	0	12	0	0	14	22	0	0	0	0	0	0	0	0	1	0	49	
6:55 AM	0	12	1	0	4	9	0	0	0	0	0	0	0	0	2	0	28	327
7:00 AM	0	7	0	0	5	13	0	0	0	0	0	0	1	0	5	0	31	331
7:05 AM	0	8	0	0	3	17	0	0	0	0	0	0	1	0	0	0	29	332
7:10 AM	0	9	0	0	0	14	0	0	0	0	0	0	0	0	3	0	26	343
7:15 AM	0	12	1	0	4	23	0	0	0	0	0	0	0	0	2	0	42	362
7:20 AM	0	5	0	0	5	21	0	0	0	0	0	0	0	0	3	0	34	379
7:25 AM	0	4	0	0	1	12	0	0	0	0	0	0	0	0	2	0	19	373
7:30 AM	0	7	1	0	0	13	0	0	0	0	0	0	0	0	2	0	23	352
7:35 AM	0	9	0	0	4	11	0	0	0	0	0	0	1	0	3	0	28	351
7:40 AM	0	6	1	0	1	9	0	0	0	0	0	0	0	0	2	0	19	350
7:45 AM	0	15	0	0	1	12	0	0	0	0	0	0	1	0	0	0	29	357
7:50 AM	0	6	0	0	7	14	0	0	0	0	0	0	0	0	2	0	29	337
7:55 AM	0	11	0	0	2	6	0	0	0	0	0	0	0	0	0	0	19	328
8:00 AM	0	4	1	0	3	11	0	0	0	0	0	0	1	0	3	0	23	320
8:05 AM	0	12	1	0	2	6	0	0	0	0	0	0	0	0	1	0	22	313
8:10 AM	0	3	1	0	2	11	0	0	0	0	0	0	1	0	0	0	18	305
8:15 AM	0	8	0	0	1	2	0	0	0	0	0	0	1	0	0	0	12	275
8:20 AM	0	6	0	0	4	4	0	0	0	0	0	0	0	0	2	0	16	257
8:25 AM	0	8	1	0	4	14	0	0	0	0	0	0	0	0	0	0	27	265
8:30 AM	0	6	1	0	1	17	0	0	0	0	0	0	0	0	2	0	27	269
8:35 AM	0	6	2	0	1	7	0	0	0	0	0	0	0	0	4	0	20	261
8:40 AM	0	8	1	0	2	14	0	0	0	0	0	0	0	0	1	0	26	268
8:45 AM	0	8	0	0	1	8	0	0	0	0	0	0	2	0	0	0	19	258
8:50 AM	0	5	0	0	1	13	0	0	0	0	0	0	1	0	0	0	20	249
8:55 AM	0	9	0	0	1	10	0	0	0	0	0	0	0	0	2	0	22	252

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	124	4	0	92	176	0	0	0	0	0	0	4	0	32	0	432
Heavy Trucks	0	16	0		12	12	0		0	0	0		4	0	8		52
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	
Comments:																	

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

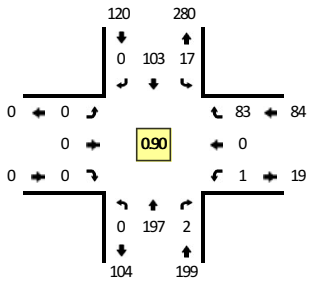
Type of peak hour being reported: Intersection Peak

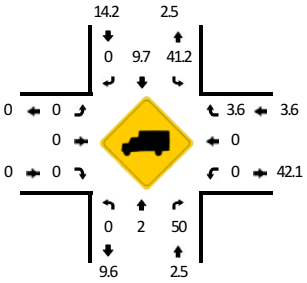
Method for determining peak hour: Total Entering Volume

LOCATION: Tehachapi Willow Springs Rd -- Oak Creek Rd
CITY/STATE: Mountain Meadows, CA

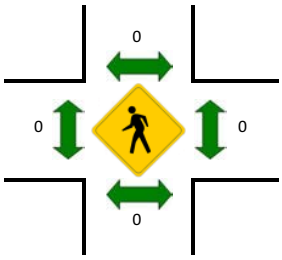
QC JOB #: 16537432
DATE: Tue, Jun 4 2024

Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

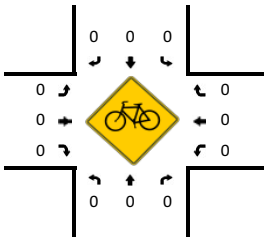


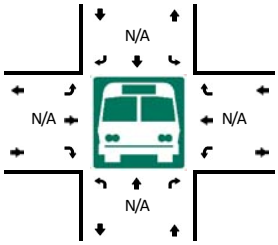


TRUE DATA TO IMPROVE MOBILITY

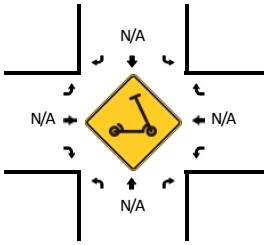












5-Min Count Period Beginning At	Tehachapi Willow Springs Rd (Northbound)				Tehachapi Willow Springs Rd (Southbound)				Oak Creek Rd (Eastbound)				Oak Creek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	13	0	0	1	6	0	0	0	0	0	0	3	0	12	0	35	
4:05 PM	0	22	1	0	0	6	0	0	0	0	0	0	3	0	10	0	42	
4:10 PM	0	8	1	0	1	11	0	0	0	0	0	0	1	0	5	0	27	
4:15 PM	0	9	0	0	3	11	0	0	0	0	0	0	0	0	7	0	30	
4:20 PM	0	14	0	0	2	6	0	0	0	0	0	0	0	0	10	0	32	
4:25 PM	0	15	0	0	5	6	0	0	0	0	0	0	0	0	6	0	32	
4:30 PM	0	24	0	0	1	8	0	0	0	0	0	0	0	0	4	0	37	
4:35 PM	0	14	1	0	1	9	0	0	0	0	0	0	1	0	6	0	32	
4:40 PM	0	20	0	0	0	9	0	0	0	0	0	0	0	0	8	0	37	
4:45 PM	0	11	0	0	0	11	0	0	0	0	0	0	0	0	10	0	32	
4:50 PM	0	17	0	0	1	8	0	0	0	0	0	0	0	0	4	0	30	
4:55 PM	0	12	0	0	2	5	0	0	0	0	0	0	0	0	9	0	28	394
5:00 PM	0	25	1	0	1	9	0	0	0	0	0	0	0	0	4	0	40	399
5:05 PM	0	12	0	0	1	5	0	0	0	0	0	0	0	0	9	0	27	384
5:10 PM	0	23	0	0	2	12	0	0	0	0	0	0	0	0	8	0	45	402
5:15 PM	0	10	0	0	1	15	0	0	0	0	0	0	0	0	5	0	31	403
5:20 PM	0	18	0	0	0	7	0	0	0	0	0	0	1	0	2	0	28	399
5:25 PM	0	11	1	0	3	5	0	0	0	0	0	0	0	0	5	0	25	392
5:30 PM	0	14	0	0	1	8	0	0	0	0	0	0	0	0	0	0	23	378
5:35 PM	0	14	0	0	0	3	0	0	0	0	0	0	0	0	4	0	21	367
5:40 PM	0	11	0	0	2	2	0	0	0	0	0	0	0	0	1	0	16	346
5:45 PM	0	13	0	0	1	8	0	0	0	0	0	0	1	0	4	0	27	341
5:50 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	4	0	14	325
5:55 PM	0	5	0	0	0	6	0	0	0	0	0	0	0	0	3	0	14	311
6:00 PM	0	10	0	0	0	6	0	0	0	0	0	0	0	0	8	0	24	295
6:05 PM	0	13	0	0	0	6	0	0	0	0	0	0	0	0	5	0	24	292
6:10 PM	0	9	0	0	0	3	0	0	0	0	0	0	0	0	1	0	13	260
6:15 PM	0	13	0	0	0	6	0	0	0	0	0	0	0	0	2	0	21	250
6:20 PM	0	4	0	0	2	5	0	0	0	0	0	0	0	0	2	0	13	235
6:25 PM	0	8	0	0	0	6	0	0	0	0	0	0	0	0	2	0	16	226
6:30 PM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	212
6:35 PM	0	14	0	0	0	4	0	0	0	0	0	0	0	0	3	0	21	212
6:40 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	1	0	8	204
6:45 PM	0	8	0	0	1	7	0	0	0	0	0	0	0	0	0	0	16	193
6:50 PM	0	11	0	0	0	3	0	0	0	0	0	0	0	0	1	0	15	194
6:55 PM	0	13	0	0	2	2	0	0	0	0	0	0	0	0	4	0	21	201

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	240	4	0	16	104	0	0	0	0	0	0	0	0	84	0	448
Heavy Trucks	0	8	0		0	20	0		0	0	0		0	0	4		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/14/2024 3:40 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd **QC JOB #:** 16537433

SPECIFIC LOCATION: **DIRECTION:** EB

CITY/STATE: Mojave, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	36-45	1
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	66-75	2
01:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
01:30 AM	0	0	0	**1**	0	0	0	0	0	0	0	1	0	0	2	21-30	1
01:45 AM	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1-10	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
02:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	46-55	1
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	71-80	1
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	51-60	1
03:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	66-75	2
03:45 AM	0	0	0	0	0	0	1	1	0	0	0	3	0	1	6	61-70	3
04:00 AM	0	0	0	0	0	0	0	0	1	4	4	2	2	2	15	56-65	8
04:15 AM	0	0	0	0	0	0	0	0	1	2	5	4	2	3	17	61-70	9
04:30 AM	0	0	0	0	0	0	0	0	0	1	1	3	2	1	8	66-75	5
04:45 AM	0	0	0	0	0	0	0	0	0	3	3	3	2	3	14	56-65	6
05:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	4	1	10	56-65	5
05:15 AM	0	0	0	0	0	**1**	**3**	0	2	3	1	3	2	1	16	66-75	5
05:30 AM	0	0	0	0	0	0	0	0	0	1	1	3	2	3	10	66-75	5
05:45 AM	0	0	0	0	0	0	0	1	1	1	5	5	**6**	1	20	66-75	11
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd **QC JOB #:** 16537433

SPECIFIC LOCATION: **DIRECTION:** EB

CITY/STATE: Mojave, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	0	0	0	1	6	6	0	**4**	17	61-70	12
06:15 AM	0	0	0	0	**1**	0	0	**3**	1	3	9	4	1	0	22	61-70	13
06:30 AM	0	0	0	0	1	0	1	0	4	2	3	4	6	1	22	66-75	10
06:45 AM	1	0	0	0	0	0	0	1	3	1	9	1	1	2	19	56-65	10
07:00 AM	0	0	0	0	0	1	0	1	2	2	4	4	4	4	22	61-70	8
07:15 AM	0	0	0	0	0	0	0	1	1	8	6	4	5	3	28	56-65	14
07:30 AM	0	0	0	1	1	0	1	1	2	5	**17**	**8**	2	1	**39**	61-70	25
07:45 AM	0	0	0	0	0	0	0	1	4	3	6	8	6	0	28	61-70	14
08:00 AM	0	0	0	0	1	0	0	1	3	6	2	3	2	3	21	51-60	9
08:15 AM	0	0	0	0	0	0	0	0	2	3	2	0	3	1	11	53-62	5
08:30 AM	0	0	**1**	1	0	0	0	1	0	5	2	1	0	1	12	56-65	7
08:45 AM	0	0	0	0	0	0	1	3	3	8	6	4	1	1	27	56-65	14
09:00 AM	0	0	0	0	0	0	0	0	2	5	6	2	2	4	21	56-65	11
09:15 AM	0	0	0	0	0	0	0	2	1	3	3	1	1	1	12	56-65	6
09:30 AM	0	0	0	0	0	0	0	2	2	8	4	5	0	2	23	56-65	12
09:45 AM	1	0	0	0	0	1	1	1	4	**9**	4	0	1	0	22	54-63	13
10:00 AM	0	0	0	0	0	1	0	0	3	1	6	0	0	0	11	56-65	7
10:15 AM	0	0	0	0	0	0	0	1	**5**	3	3	2	3	1	18	51-60	8
10:30 AM	0	0	0	0	0	0	0	0	2	2	7	4	2	1	18	61-70	11
10:45 AM	0	0	0	0	0	0	1	1	5	9	2	6	0	0	24	51-60	14
11:00 AM	0	0	0	0	0	0	0	3	2	2	3	1	0	1	12	46-55	5
11:15 AM	0	0	0	0	0	0	0	0	1	3	5	1	1	1	12	56-65	8
11:30 AM	0	0	0	0	0	0	0	3	0	8	2	2	1	1	17	56-65	10
11:45 AM	0	0	0	0	0	0	0	0	1	5	6	4	0	1	17	56-65	11
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd **QC JOB #:** 16537433
SPECIFIC LOCATION: **DIRECTION:** EB
CITY/STATE: Mojave, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	0	0	0	0	1	1	2	7	5	1	0	0	17	56-65	12
12:15 PM	0	0	0	0	0	0	2	0	1	4	5	2	1	0	15	56-65	9
12:30 PM	0	0	0	0	**1**	0	1	1	1	3	2	2	1	0	12	56-65	5
12:45 PM	0	0	0	**1**	0	0	0	**3**	3	2	1	0	0	0	10	46-55	6
01:00 PM	0	0	0	0	0	0	0	0	1	3	2	0	1	0	7	56-65	5
01:15 PM	0	0	0	0	0	0	1	2	1	1	1	4	0	0	10	61-70	5
01:30 PM	0	0	0	0	0	0	1	2	5	4	1	0	0	0	13	51-60	9
01:45 PM	0	0	0	1	0	0	1	2	2	2	0	2	0	0	10	46-55	4
02:00 PM	0	0	0	0	0	0	2	1	2	2	4	**7**	1	**2**	21	61-70	11
02:15 PM	0	0	0	0	0	0	2	3	1	3	3	1	0	0	13	56-65	6
02:30 PM	0	0	0	0	1	0	0	1	1	6	5	4	2	0	20	56-65	11
02:45 PM	0	0	0	0	0	0	2	1	3	7	2	2	0	0	17	51-60	10
03:00 PM	0	0	0	0	0	0	1	3	2	6	3	2	0	1	18	56-65	9
03:15 PM	0	0	0	1	0	0	0	0	4	2	1	5	**4**	1	18	66-75	9
03:30 PM	0	0	0	0	0	0	0	1	3	7	2	3	0	1	17	51-60	10
03:45 PM	0	0	0	0	1	0	**3**	0	5	3	2	2	0	0	16	51-60	8
04:00 PM	0	0	0	1	0	0	1	1	**6**	6	5	5	2	0	**27**	51-60	12
04:15 PM	0	0	0	0	0	0	0	1	3	5	4	2	0	1	16	56-65	9
04:30 PM	0	0	0	0	0	0	1	1	2	**10**	1	2	2	2	21	51-60	12
04:45 PM	0	0	0	0	0	0	0	0	1	2	**6**	2	1	0	12	58-67	8
05:00 PM	0	0	0	1	0	0	0	0	0	7	4	4	1	0	17	56-65	11
05:15 PM	0	0	0	0	0	0	0	0	4	0	1	2	2	0	9	46-55	4
05:30 PM	0	0	0	1	0	0	0	1	1	3	1	2	0	2	11	53-62	4
05:45 PM	0	0	0	1	0	0	0	0	2	0	2	1	0	0	6	61-70	3
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

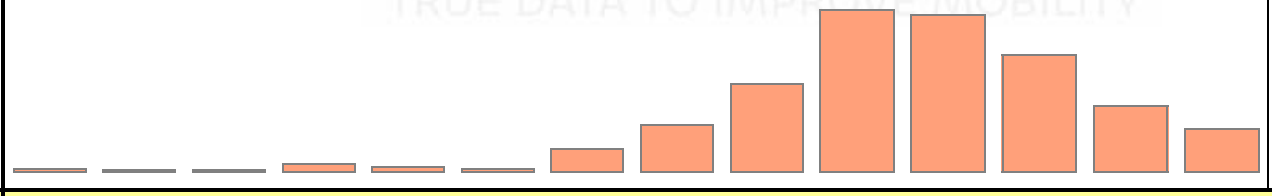
Report generated on 6/17/2024 4:36 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	0	1	0	1	2	4	3	0	11	66-75	7
06:15 PM	0	0	0	0	0	0	0	1	2	2	0	0	3	0	8	51-60	4
06:30 PM	0	0	0	0	0	0	0	1	1	1	1	0	0	0	4	46-55	2
06:45 PM	0	0	0	0	0	0	0	0	3	1	3	0	0	0	7	51-60	4
07:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	51-60	4
07:15 PM	0	0	0	0	0	0	0	3	2	2	0	2	2	1	12	46-55	5
07:30 PM	0	0	0	0	0	0	0	0	1	0	3	1	0	0	5	61-70	4
07:45 PM	0	0	0	0	0	0	0	0	1	1	1	3	0	0	6	61-70	4
08:00 PM	0	0	0	0	0	0	0	0	1	2	0	2	0	0	5	51-60	3
08:15 PM	0	0	0	0	0	0	0	2	0	1	0	0	1	0	4	41-50	2
08:30 PM	0	0	0	0	0	0	0	0	1	1	2	1	0	0	5	61-70	3
08:45 PM	0	0	0	0	0	0	1	2	0	0	1	1	1	0	6	41-50	3
09:00 PM	0	0	0	0	0	0	0	1	2	2	1	0	1	0	7	51-60	4
09:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	56-65	2
09:30 PM	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	46-55	2
09:45 PM	0	0	0	1	0	0	0	0	0	1	1	0	0	0	3	56-65	2
10:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	56-65	3
10:15 PM	0	0	0	0	0	0	1	3	1	2	3	0	0	1	11	56-65	5
10:30 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	3	56-65	2
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	66-75	2
11:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
11:15 PM	0	0	0	0	0	0	1	0	0	0	1	0	1	0	3	36-45	1
11:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	3	0	1	11	7	4	32	70	133	243	236	176	98	65	1079	56-65	479
Percent	0.3%	0%	0.1%	1%	0.6%	0.4%	3%	6.5%	12.3%	22.5%	21.9%	16.3%	9.1%	6%			
AM Peak	1:45 AM	12:00 AM	8:30 AM	1:30 AM	6:15 AM	5:15 AM	5:15 AM	6:15 AM	10:15 AM	9:45 AM	7:30 AM	7:30 AM	5:45 AM	6:00 AM	7:30 AM		
15-min Vol	1	0	1	1	1	1	3	3	5	9	17	8	6	4	39		
PM Peak	12:00 PM	12:00 PM	12:00 PM	12:45 PM	12:30 PM	12:00 PM	3:45 PM	12:45 PM	4:00 PM	4:30 PM	4:45 PM	2:00 PM	3:15 PM	2:00 PM	4:00 PM		
15-min Vol	0	0	0	1	1	0	3	3	6	10	6	7	4	2	27		



Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	3	0	1	11	7	4	32	70	133	243	236	176	98	65	1079	56-65	479
Percent	0.3%	0%	0.1%	1%	0.6%	0.4%	3%	6.5%	12.3%	22.5%	21.9%	16.3%	9.1%	6%			
Cumulative Percent	0.3%	0.3%	0.4%	1.4%	2%	2.4%	5.4%	11.9%	24.2%	46.7%	68.6%	84.9%	94%	100%			

ADT
1079



85th Percentile: 70 MPH
Mean Speed(Average): 60 MPH
Median: 60 MPH
Mode: 58 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
01:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
03:45 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
04:00 AM	0	12	3	0	0	0	0	0	0	0	0	0	0	0	15
04:15 AM	0	13	2	1	1	0	0	0	0	0	0	0	0	0	17
04:30 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
04:45 AM	0	9	2	0	1	0	0	0	2	0	0	0	0	0	14
05:00 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	0	10
05:15 AM	0	12	2	1	1	0	0	0	0	0	0	0	0	0	16
05:30 AM	0	6	3	0	1	0	0	0	0	0	0	0	0	0	10
05:45 AM	0	14	2	0	1	0	0	1	2	0	0	0	0	0	20
Day Total															
Percent															
ADT															
1079															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	0	14	3	0	0	0	0	0	0	0	0	0	0	0	17
06:15 AM	0	12	**8**	0	1	0	0	0	0	0	1	0	0	0	22
06:30 AM	1	16	1	1	2	0	0	1	0	0	0	0	0	0	22
06:45 AM	0	10	2	1	3	0	0	**2**	0	0	0	0	0	**1**	19
07:00 AM	0	19	1	0	1	0	0	0	1	0	0	0	0	0	22
07:15 AM	0	22	3	0	1	0	**1**	0	1	0	0	0	0	0	28
07:30 AM	0	**26**	7	0	4	0	0	2	0	0	0	0	0	0	**39**
07:45 AM	0	14	6	0	3	1	0	0	2	0	1	0	0	1	28
08:00 AM	0	18	0	1	2	0	0	0	0	0	0	0	0	0	21
08:15 AM	0	8	0	0	1	0	1	0	1	0	0	0	0	0	11
08:30 AM	0	8	3	0	1	0	0	0	0	0	0	0	0	0	12
08:45 AM	**2**	19	2	1	0	0	0	2	1	0	0	0	0	0	27
09:00 AM	0	9	3	0	**8**	0	0	0	0	0	0	0	0	1	21
09:15 AM	0	8	2	0	1	0	0	0	1	0	0	0	0	0	12
09:30 AM	0	10	2	**2**	5	1	1	0	2	0	0	0	0	0	23
09:45 AM	1	12	4	1	1	0	0	2	1	0	0	0	0	0	22
10:00 AM	0	6	3	0	0	1	0	0	0	0	0	0	0	1	11
10:15 AM	0	8	3	0	4	**2**	0	0	1	0	0	0	0	0	18
10:30 AM	0	9	6	0	1	1	0	1	0	0	0	0	0	0	18
10:45 AM	0	17	3	0	2	1	0	0	1	0	0	0	0	0	24
11:00 AM	0	8	3	0	0	1	0	0	0	0	0	0	0	0	12
11:15 AM	0	6	1	0	3	0	0	0	2	0	0	0	0	0	12
11:30 AM	0	11	1	0	1	0	0	0	**3**	0	0	**1**	0	0	17
11:45 AM	0	13	1	1	0	0	0	0	0	0	**2**	0	0	0	17
Day Total															
Percent															
ADT 1079															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	7	4	0	3	2	0	0	1	0	0	0	0	0	17
12:15 PM	0	10	2	0	0	3	0	0	0	0	0	0	0	0	15
12:30 PM	0	6	2	1	1	1	0	0	0	0	1	0	0	0	12
12:45 PM	0	3	4	0	2	0	0	0	1	0	0	0	0	0	10
01:00 PM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
01:15 PM	0	7	0	0	1	2	0	0	0	0	0	0	0	0	10
01:30 PM	0	6	3	0	1	1	0	1	1	0	0	0	0	0	13
01:45 PM	1	5	1	0	2	0	1	0	0	0	0	0	0	0	10
02:00 PM	0	8	7	0	4	1	0	1	0	0	0	0	0	0	21
02:15 PM	0	6	5	0	1	0	0	0	1	0	0	0	0	0	13
02:30 PM	0	13	5	1	0	0	0	0	1	0	0	0	0	0	20
02:45 PM	1	11	2	0	3	0	0	0	0	0	0	0	0	0	17
03:00 PM	0	10	4	0	1	0	1	1	1	0	0	0	0	0	18
03:15 PM	1	11	3	0	2	0	0	1	0	0	0	0	0	0	18
03:30 PM	0	8	6	0	3	0	0	0	0	0	0	0	0	0	17
03:45 PM	0	8	5	0	2	0	0	1	0	0	0	0	0	0	16
04:00 PM	0	20	4	0	3	0	0	0	0	0	0	0	0	0	27
04:15 PM	0	9	5	0	1	1	0	0	0	0	0	0	0	0	16
04:30 PM	0	17	2	0	1	1	0	0	0	0	0	0	0	0	21
04:45 PM	0	8	2	0	2	0	0	0	0	0	0	0	0	0	12
05:00 PM	0	12	4	0	1	0	0	0	0	0	0	0	0	0	17
05:15 PM	1	3	5	0	0	0	0	0	0	0	0	0	0	0	9
05:30 PM	0	9	1	0	1	0	0	0	0	0	0	0	0	0	11
05:45 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
Day Total															
Percent															
ADT 1079															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	7	3	0	1	0	0	0	0	0	0	0	0	0	11
06:15 PM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
06:30 PM	0	2	1	0	0	0	0	1	0	0	0	0	0	0	4
06:45 PM	0	4	2	1	0	0	0	0	0	0	0	0	0	0	7
07:00 PM	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4
07:15 PM	0	8	3	0	1	0	0	0	0	0	0	0	0	0	12
07:30 PM	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
07:45 PM	0	3	2	0	0	0	0	0	1	0	0	0	0	0	6
08:00 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
08:15 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
08:30 PM	1	3	1	0	0	0	0	0	0	0	0	0	0	0	5
08:45 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
09:00 PM	0	5	1	0	0	0	0	1	0	0	0	0	0	0	7
09:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
09:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
09:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
10:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
10:15 PM	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
10:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
10:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
11:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	9	684	196	13	93	20	5	19	30	0	5	1	0	4	1079
Percent	0.8%	63.4%	18.2%	1.2%	8.6%	1.9%	0.5%	1.8%	2.8%	0%	0.5%	0.1%	0%	0.4%	
ADT 1079															
AM Peak	8:45 AM	7:30 AM	6:15 AM	9:30 AM	9:00 AM	10:15 AM	7:15 AM	6:45 AM	11:30 AM	12:00 AM	11:45 AM	11:30 AM	12:00 AM	6:45 AM	7:30 AM
15-min Vol	2	26	8	2	8	2	1	2	3	0	2	1	0	1	39
PM Peak	1:45 PM	4:00 PM	2:00 PM	12:30 PM	2:00 PM	12:15 PM	1:45 PM	1:30 PM	12:00 PM	12:00 PM	12:30 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
15-min Vol	1	20	7	1	4	3	1	1	1	0	1	0	0	0	27

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
SPECIFIC LOCATION:
CITY/STATE: Mojave, CA

QC JOB #: 16537433
DIRECTION: EB
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	9	684	196	13	93	20	5	19	30	0	5	1	0	4	1079
Percent	0.8%	63.4%	18.2%	1.2%	8.6%	1.9%	0.5%	1.8%	2.8%	0%	0.5%	0.1%	0%	0.4%	
ADT 1079															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd | **QC JOB #:** 16537433

SPECIFIC LOCATION: | **DIRECTION:** EB

CITY/STATE: Mojave, CA | **DATE:** Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		2				2			2	
12:15 AM		0				0			0	
12:30 AM		0				0			0	
12:45 AM		1				1			1	
01:00 AM		2				2			2	
01:15 AM		1				1			1	
01:30 AM		2				2			2	
01:45 AM		1				1			1	
02:00 AM		1				1			1	
02:15 AM		2				2			2	
02:30 AM		0				0			0	
02:45 AM		3				3			3	
03:00 AM		0				0			0	
03:15 AM		2				2			2	
03:30 AM		2				2			2	
03:45 AM		6				6			6	
04:00 AM		15				15			15	
04:15 AM		17				17			17	
04:30 AM		8				8			8	
04:45 AM		14				14			14	
05:00 AM		10				10			10	
05:15 AM		16				16			16	
05:30 AM		10				10			10	
05:45 AM		20				20			20	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		17				17			17	
06:15 AM		22				22			22	
06:30 AM		22				22			22	
06:45 AM		19				19			19	
07:00 AM		22				22			22	
07:15 AM		28				28			28	
07:30 AM		**39**				**39**			**39**	
07:45 AM		28				28			28	
08:00 AM		21				21			21	
08:15 AM		11				11			11	
08:30 AM		12				12			12	
08:45 AM		27				27			27	
09:00 AM		21				21			21	
09:15 AM		12				12			12	
09:30 AM		23				23			23	
09:45 AM		22				22			22	
10:00 AM		11				11			11	
10:15 AM		18				18			18	
10:30 AM		18				18			18	
10:45 AM		24				24			24	
11:00 AM		12				12			12	
11:15 AM		12				12			12	
11:30 AM		17				17			17	
11:45 AM		17				17			17	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		17				17			17	
12:15 PM		15				15			15	
12:30 PM		12				12			12	
12:45 PM		10				10			10	
01:00 PM		7				7			7	
01:15 PM		10				10			10	
01:30 PM		13				13			13	
01:45 PM		10				10			10	
02:00 PM		21				21			21	
02:15 PM		13				13			13	
02:30 PM		20				20			20	
02:45 PM		17				17			17	
03:00 PM		18				18			18	
03:15 PM		18				18			18	
03:30 PM		17				17			17	
03:45 PM		16				16			16	
04:00 PM		**27**				**27**			**27**	
04:15 PM		16				16			16	
04:30 PM		21				21			21	
04:45 PM		12				12			12	
05:00 PM		17				17			17	
05:15 PM		9				9			9	
05:30 PM		11				11			11	
05:45 PM		6				6			6	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		11				11			11	
06:15 PM		8				8			8	
06:30 PM		4				4			4	
06:45 PM		7				7			7	
07:00 PM		4				4			4	
07:15 PM		12				12			12	
07:30 PM		5				5			5	
07:45 PM		6				6			6	
08:00 PM		5				5			5	
08:15 PM		4				4			4	
08:30 PM		5				5			5	
08:45 PM		6				6			6	
09:00 PM		7				7			7	
09:15 PM		2				2			2	
09:30 PM		3				3			3	
09:45 PM		3				3			3	
10:00 PM		3				3			3	
10:15 PM		11				11			11	
10:30 PM		3				3			3	
10:45 PM		2				2			2	
11:00 PM		1				1			1	
11:15 PM		3				3			3	
11:30 PM		1				1			1	
11:45 PM		0				0			0	
Day Total		1079				1079			1079	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		7:30 AM 39				7:30 AM 39			7:30 AM 39	
PM Peak 15-min Vol		4:00 PM 27				4:00 PM 27			4:00 PM 27	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	1	1	0	0	0	1	0	1	4	41-50	2
12:15 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	56-65	2
12:30 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	31-40	1
12:45 AM	0	**1**	0	0	0	0	1	1	0	2	1	0	0	0	6	56-65	3
01:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	66-75	2
01:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	41-50	1
01:30 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	1	0	0	3	21-30	1
01:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1-10	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	56-65	3
02:15 AM	0	0	0	0	0	0	0	1	1	2	2	0	1	0	7	56-65	4
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	1	1	4	56-65	2
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:15 AM	0	0	0	0	0	0	0	0	1	1	1	0	0	1	4	51-60	2
03:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	61-70	2
03:45 AM	0	0	0	0	0	0	1	1	1	0	0	3	0	1	7	61-70	3
04:00 AM	0	0	0	0	0	0	0	0	2	4	5	3	2	2	18	56-65	9
04:15 AM	0	0	0	0	0	0	0	0	2	3	6	6	2	**4**	23	61-70	12
04:30 AM	0	0	0	0	0	0	0	0	0	2	3	4	2	2	13	61-70	7
04:45 AM	0	0	0	0	0	0	0	0	1	6	3	3	2	4	19	56-65	9
05:00 AM	0	0	0	0	0	0	0	0	3	0	7	0	4	1	15	56-65	7
05:15 AM	1	0	0	0	0	1	**3**	0	3	5	4	3	3	1	24	56-65	9
05:30 AM	0	0	0	0	0	0	0	0	2	5	2	3	4	3	19	55-64	7
05:45 AM	0	0	0	0	0	0	0	2	2	4	6	7	7	4	32	66-75	14
Day Total																	
Percent																	
AM Peak																	
15-min Vol																	
PM Peak																	
15-min Vol																	

Comments:

TRUE DATA TO IMPROVE MOBILITY

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	1	0	0	1	6	6	1	4	19	61-70	12
06:15 AM	0	0	0	0	**1**	0	0	**6**	3	5	10	5	2	0	32	56-65	15
06:30 AM	0	1	0	0	1	0	2	4	5	4	5	6	**8**	1	37	66-75	14
06:45 AM	1	0	0	0	0	0	0	6	8	6	11	2	1	2	37	56-65	17
07:00 AM	0	0	0	0	0	**2**	1	2	2	5	6	7	4	4	33	61-70	13
07:15 AM	0	0	0	0	0	0	0	5	4	12	9	7	5	3	45	56-65	21
07:30 AM	0	0	0	1	1	1	3	2	2	7	**21**	**13**	3	1	**55**	61-70	34
07:45 AM	0	0	0	0	0	0	1	3	5	5	10	9	8	0	41	61-70	19
08:00 AM	0	0	0	0	1	0	0	5	6	6	2	3	2	3	28	51-60	12
08:15 AM	0	0	0	0	1	0	1	0	2	7	5	1	4	1	22	56-65	12
08:30 AM	0	0	**1**	1	0	1	0	1	5	12	5	2	0	1	29	51-60	17
08:45 AM	0	0	0	0	0	0	1	6	**9**	12	9	5	1	1	44	53-62	21
09:00 AM	0	0	0	0	0	0	2	0	3	9	8	4	3	4	33	56-65	17
09:15 AM	0	0	0	0	0	0	0	5	2	8	3	2	1	1	22	56-65	11
09:30 AM	0	0	0	0	0	0	0	4	8	11	10	6	0	2	41	56-65	21
09:45 AM	1	0	0	1	1	1	1	1	9	**15**	7	0	1	0	38	51-60	24
10:00 AM	0	0	0	0	0	1	0	1	7	3	9	0	1	1	23	56-65	12
10:15 AM	0	0	0	0	0	0	0	1	7	4	6	5	3	1	27	51-60	11
10:30 AM	0	0	0	0	0	0	0	1	4	5	7	7	2	1	27	61-70	14
10:45 AM	0	0	0	0	0	0	1	1	8	11	5	6	1	0	33	51-60	19
11:00 AM	0	0	0	0	0	0	2	6	4	4	4	2	0	1	23	46-55	10
11:15 AM	0	0	1	0	0	0	0	0	3	6	13	2	1	3	29	56-65	19
11:30 AM	0	0	0	0	0	0	0	4	2	15	4	4	3	4	36	56-65	19
11:45 AM	0	0	0	0	0	0	0	1	4	6	8	5	1	2	27	56-65	14
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	**1**	0	0	0	3	1	5	11	8	2	1	0	32	56-65	19
12:15 PM	0	0	0	0	0	0	2	1	5	8	9	3	2	0	30	56-65	17
12:30 PM	0	0	0	0	1	1	2	2	4	6	5	2	1	0	24	56-65	11
12:45 PM	0	0	0	**1**	0	1	0	4	11	7	1	2	0	0	27	51-60	18
01:00 PM	0	0	0	0	0	**2**	1	2	6	10	3	1	2	0	27	51-60	16
01:15 PM	0	0	0	1	1	0	3	3	9	3	2	5	1	0	28	46-55	12
01:30 PM	0	0	0	0	0	0	2	6	8	8	1	2	0	0	27	51-60	16
01:45 PM	0	0	0	1	0	0	2	5	5	8	4	3	0	0	28	51-60	13
02:00 PM	0	0	0	0	0	0	**5**	4	4	3	8	8	1	**2**	35	61-70	16
02:15 PM	0	0	0	0	0	0	4	**7**	9	8	6	3	1	0	38	51-60	17
02:30 PM	0	0	0	0	1	0	1	3	4	11	9	5	2	0	36	56-65	20
02:45 PM	0	0	0	0	0	0	4	3	7	12	9	3	1	0	39	56-65	21
03:00 PM	0	0	1	0	0	0	1	3	8	15	5	4	0	1	38	51-60	23
03:15 PM	0	**1**	0	1	0	1	2	0	10	4	2	**9**	5	2	37	51-60	14
03:30 PM	0	0	0	0	0	1	1	5	11	16	4	5	0	1	44	51-60	27
03:45 PM	0	0	0	0	1	2	3	5	**12**	10	6	4	0	1	44	51-60	22
04:00 PM	0	0	0	1	0	0	2	2	9	9	8	8	4	1	44	51-60	18
04:15 PM	0	0	0	0	0	0	0	3	7	11	10	3	1	2	37	56-65	21
04:30 PM	0	0	0	0	0	0	1	4	10	15	**11**	7	3	2	**53**	56-65	26
04:45 PM	0	0	0	0	1	0	1	2	4	9	9	5	1	0	32	56-65	18
05:00 PM	0	0	0	1	0	0	0	7	5	**17**	9	6	2	0	47	56-65	26
05:15 PM	0	0	0	0	0	0	0	0	7	8	9	6	**7**	0	37	56-65	17
05:30 PM	0	0	0	1	0	0	1	3	6	11	4	3	1	2	32	51-60	17
05:45 PM	0	0	0	1	0	0	1	3	9	9	9	1	0	0	33	51-60	18
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

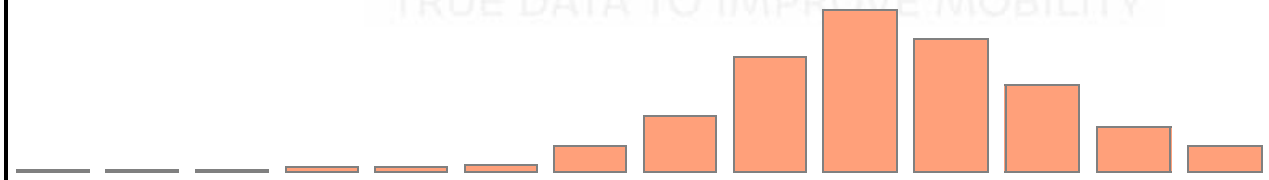
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	0	1	1	6	6	5	3	1	23	56-65	12
06:15 PM	0	0	0	0	0	0	0	2	6	3	3	2	5	0	21	51-60	9
06:30 PM	0	0	0	0	0	1	0	3	5	6	3	1	1	0	20	51-60	11
06:45 PM	0	0	0	0	0	0	0	1	5	5	5	5	0	0	21	51-60	10
07:00 PM	0	0	0	0	0	0	1	1	3	8	5	3	2	1	24	56-65	13
07:15 PM	0	0	0	0	0	0	3	5	4	8	1	4	3	1	29	51-60	12
07:30 PM	0	0	0	0	0	0	3	0	1	5	10	2	0	0	21	56-65	15
07:45 PM	0	0	0	0	0	0	0	1	2	4	5	3	0	1	16	56-65	9
08:00 PM	0	0	0	0	0	0	0	1	5	3	0	3	0	0	12	51-60	8
08:15 PM	0	0	0	0	0	0	1	3	5	2	1	1	1	0	14	46-55	8
08:30 PM	0	0	0	0	0	0	0	2	6	2	2	2	0	0	14	48-57	8
08:45 PM	0	0	0	1	1	0	2	3	2	5	1	1	1	0	17	51-60	7
09:00 PM	0	0	0	0	0	0	0	1	7	5	5	0	3	0	21	51-60	12
09:15 PM	0	0	0	0	0	0	0	0	7	2	2	2	0	0	13	51-60	9
09:30 PM	0	0	0	0	0	0	0	1	3	7	1	0	0	0	12	51-60	10
09:45 PM	0	0	0	1	0	0	0	0	0	1	2	1	0	0	5	61-70	3
10:00 PM	0	0	0	0	0	0	1	1	0	6	1	0	0	0	9	56-65	7
10:15 PM	0	0	0	0	0	0	2	4	1	2	4	0	1	1	15	41-50	6
10:30 PM	0	0	0	0	0	0	0	1	3	5	1	0	1	0	11	51-60	8
10:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	1	0	5	46-55	2
11:00 PM	0	0	0	0	3	1	2	0	4	0	1	0	1	0	12	31-40	4
11:15 PM	0	0	0	0	0	0	1	2	0	2	1	0	1	0	7	56-65	3
11:30 PM	0	0	0	0	0	0	2	2	3	0	0	0	0	0	7	46-55	5
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	61-70	1
Day Total	5	3	4	14	15	19	82	186	380	532	441	282	146	85	2194	56-65	973
Percent	0.2%	0.1%	0.2%	0.6%	0.7%	0.9%	3.7%	8.5%	17.3%	24.2%	20.1%	12.9%	6.7%	3.9%			



AM Peak	1:30 AM	12:45 AM	8:30 AM	1:30 AM	6:15 AM	7:00 AM	5:15 AM	6:15 AM	8:45 AM	9:45 AM	7:30 AM	7:30 AM	6:30 AM	4:15 AM	7:30 AM		
15-min Vol	1	1	1	1	1	2	3	6	9	15	21	13	8	4	55		
PM Peak	12:00 PM	3:15 PM	12:00 PM	12:45 PM	11:00 PM	1:00 PM	2:00 PM	2:15 PM	3:45 PM	5:00 PM	4:30 PM	3:15 PM	5:15 PM	2:00 PM	4:30 PM		
15-min Vol	0	1	1	1	3	2	5	7	12	17	11	9	7	2	53		

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
SPECIFIC LOCATION:
CITY/STATE: Mojave, CA

QC JOB #: 16537433
DIRECTION: EB, WB
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	5	3	4	14	15	19	82	186	380	532	441	282	146	85	2194	56-65	973
Percent	0.2%	0.1%	0.2%	0.6%	0.7%	0.9%	3.7%	8.5%	17.3%	24.2%	20.1%	12.9%	6.7%	3.9%			
Cumulative Percent	0.2%	0.4%	0.5%	1.2%	1.9%	2.7%	6.5%	14.9%	32.3%	56.5%	76.6%	89.5%	96.1%	100%			

ADT
2194



85th Percentile: 68 MPH
Mean Speed(Average): 58 MPH
Median: 58 MPH
Mode: 58 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
12:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
12:45 AM	0	4	1	0	0	0	0	0	1	0	0	0	0	0	6
01:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
01:15 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
01:30 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
01:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
02:15 AM	0	6	0	0	0	0	0	0	1	0	0	0	0	0	7
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
03:30 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
03:45 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
04:00 AM	0	14	4	0	0	0	0	0	0	0	0	0	0	0	18
04:15 AM	0	18	2	2	1	0	0	0	0	0	0	0	0	0	23
04:30 AM	0	10	2	0	1	0	0	0	0	0	0	0	0	0	13
04:45 AM	0	12	3	0	1	0	0	0	2	0	1	0	0	0	19
05:00 AM	0	10	4	0	1	0	0	0	0	0	0	0	0	0	15
05:15 AM	0	19	3	1	1	0	0	0	0	0	0	0	0	0	24
05:30 AM	0	13	4	0	1	0	0	0	0	0	1	0	0	0	19
05:45 AM	1	20	7	0	1	0	0	1	2	0	0	0	0	0	32
Day Total															
Percent															
ADT 2194															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	0	15	4	0	0	0	0	0	0	0	0	0	0	0	19
06:15 AM	0	15	10	0	1	1	0	2	2	0	1	0	0	0	32
06:30 AM	1	25	4	2	2	1	0	1	1	0	0	0	0	0	37
06:45 AM	0	15	8	1	5	0	1	**5**	0	0	1	0	0	**1**	37
07:00 AM	0	23	5	0	2	0	**2**	0	1	0	0	0	0	0	33
07:15 AM	0	30	4	0	9	0	1	0	1	0	0	0	0	0	45
07:30 AM	1	**33**	**11**	0	8	0	0	2	0	0	0	0	0	0	**55**
07:45 AM	0	20	9	0	4	**2**	0	0	2	0	**3**	0	0	1	41
08:00 AM	0	20	1	2	2	0	0	2	0	0	1	0	0	0	28
08:15 AM	0	13	4	0	1	0	1	1	2	0	0	0	0	0	22
08:30 AM	0	15	7	1	3	0	0	2	0	0	1	0	0	0	29
08:45 AM	**2**	29	7	1	0	0	0	4	1	0	0	0	0	0	44
09:00 AM	0	13	6	1	**10**	0	0	2	0	0	0	0	0	1	33
09:15 AM	0	13	3	0	3	0	0	1	2	0	0	0	0	0	22
09:30 AM	0	21	5	2	6	1	1	3	2	0	0	0	0	0	41
09:45 AM	1	19	6	1	5	0	0	3	2	0	1	0	0	0	38
10:00 AM	0	13	3	1	1	2	0	1	1	0	0	0	0	1	23
10:15 AM	0	14	5	0	5	2	0	0	1	0	0	0	0	0	27
10:30 AM	1	15	8	0	1	1	0	1	0	0	0	0	0	0	27
10:45 AM	0	20	6	0	5	1	0	0	1	0	0	0	0	0	33
11:00 AM	0	12	6	0	0	1	0	4	0	0	0	0	0	0	23
11:15 AM	0	18	1	2	5	0	0	0	2	0	1	0	0	0	29
11:30 AM	0	19	6	0	1	1	0	2	**6**	0	0	**1**	0	0	36
11:45 AM	0	19	4	1	0	0	0	1	0	0	2	0	0	0	27
Day Total															
Percent															
ADT 2194															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	16	7	0	**6**	2	0	0	1	0	0	0	0	0	32
12:15 PM	0	19	3	0	3	**4**	0	1	0	0	0	0	0	0	30
12:30 PM	0	11	5	**2**	1	2	0	**2**	0	0	**1**	0	0	0	24
12:45 PM	0	14	8	0	4	0	0	0	1	0	0	0	0	0	27
01:00 PM	0	18	6	0	0	0	0	1	1	0	1	0	0	0	27
01:15 PM	0	20	2	0	3	2	0	0	0	0	1	0	0	0	28
01:30 PM	0	16	6	0	2	1	0	1	1	0	0	0	0	0	27
01:45 PM	1	17	3	0	4	0	**1**	1	1	0	0	0	0	0	28
02:00 PM	1	17	**11**	0	4	1	0	1	0	0	0	0	0	0	35
02:15 PM	0	21	8	0	5	1	0	1	**2**	0	0	0	0	0	38
02:30 PM	2	22	7	1	3	0	0	0	1	0	0	0	0	0	36
02:45 PM	1	24	9	0	3	0	0	1	0	0	1	0	0	0	39
03:00 PM	0	26	7	0	2	0	1	1	1	0	0	0	0	0	38
03:15 PM	1	23	9	0	2	0	0	1	0	0	0	0	0	**1**	37
03:30 PM	0	28	10	1	4	0	0	0	1	0	0	0	0	0	44
03:45 PM	0	30	9	0	3	1	0	1	0	0	0	0	0	0	44
04:00 PM	2	32	6	0	3	0	0	1	0	0	0	0	0	0	44
04:15 PM	0	28	6	0	2	1	0	0	0	0	0	0	0	0	37
04:30 PM	0	**42**	8	0	2	1	0	0	0	0	0	0	0	0	**53**
04:45 PM	0	24	5	1	2	0	0	0	0	0	0	0	0	0	32
05:00 PM	0	37	8	0	2	0	0	0	0	0	0	0	0	0	47
05:15 PM	**4**	23	9	0	1	0	0	0	0	0	0	0	0	0	37
05:30 PM	0	27	2	0	2	1	0	0	0	0	0	0	0	0	32
05:45 PM	0	24	7	0	1	0	0	1	0	0	0	0	0	0	33
Day Total															
Percent															
ADT															
2194															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	17	4	0	1	0	0	1	0	0	0	0	0	0	23
06:15 PM	0	15	5	0	1	0	0	0	0	0	0	0	0	0	21
06:30 PM	0	15	4	0	0	0	0	1	0	0	0	0	0	0	20
06:45 PM	0	13	6	1	1	0	0	0	0	0	0	0	0	0	21
07:00 PM	0	17	6	0	1	0	0	0	0	0	0	0	0	0	24
07:15 PM	0	21	6	0	1	0	0	1	0	0	0	0	0	0	29
07:30 PM	0	15	5	0	1	0	0	0	0	0	0	0	0	0	21
07:45 PM	0	12	2	0	1	0	0	0	1	0	0	0	0	0	16
08:00 PM	0	11	1	0	0	0	0	0	0	0	0	0	0	0	12
08:15 PM	0	10	4	0	0	0	0	0	0	0	0	0	0	0	14
08:30 PM	1	10	3	0	0	0	0	0	0	0	0	0	0	0	14
08:45 PM	0	14	3	0	0	0	0	0	0	0	0	0	0	0	17
09:00 PM	1	16	3	0	0	0	0	1	0	0	0	0	0	0	21
09:15 PM	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
09:30 PM	1	8	3	0	0	0	0	0	0	0	0	0	0	0	12
09:45 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
10:00 PM	0	7	1	0	1	0	0	0	0	0	0	0	0	0	9
10:15 PM	0	13	2	0	0	0	0	0	0	0	0	0	0	0	15
10:30 PM	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
10:45 PM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
11:00 PM	0	9	2	0	0	0	0	0	1	0	0	0	0	0	12
11:15 PM	0	4	2	0	0	0	0	1	0	0	0	0	0	0	7
11:30 PM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
11:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	22	1421	402	24	161	30	8	58	45	0	17	1	0	5	2194
Percent	1%	64.8%	18.3%	1.1%	7.3%	1.4%	0.4%	2.6%	2.1%	0%	0.8%	0%	0%	0.2%	
ADT 2194															
AM Peak	8:45 AM	7:30 AM	7:30 AM	4:15 AM	9:00 AM	7:45 AM	7:00 AM	6:45 AM	11:30 AM	12:00 AM	7:45 AM	11:30 AM	12:00 AM	6:45 AM	7:30 AM
15-min Vol	2	33	11	2	10	2	2	5	6	0	3	1	0	1	55
PM Peak	5:15 PM	4:30 PM	2:00 PM	12:30 PM	12:00 PM	12:15 PM	1:45 PM	12:30 PM	2:15 PM	12:00 PM	12:30 PM	12:00 PM	12:00 PM	3:15 PM	4:30 PM
15-min Vol	4	42	11	2	6	4	1	2	2	0	1	0	0	1	53

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
SPECIFIC LOCATION:
CITY/STATE: Mojave, CA

QC JOB #: 16537433
DIRECTION: EB, WB
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	22	1421	402	24	161	30	8	58	45	0	17	1	0	5	2194
Percent	1%	64.8%	18.3%	1.1%	7.3%	1.4%	0.4%	2.6%	2.1%	0%	0.8%	0%	0%	0.2%	
ADT 2194															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		4				4			4	
12:15 AM		2				2			2	
12:30 AM		2				2			2	
12:45 AM		6				6			6	
01:00 AM		3				3			3	
01:15 AM		2				2			2	
01:30 AM		3				3			3	
01:45 AM		1				1			1	
02:00 AM		3				3			3	
02:15 AM		7				7			7	
02:30 AM		0				0			0	
02:45 AM		4				4			4	
03:00 AM		0				0			0	
03:15 AM		4				4			4	
03:30 AM		3				3			3	
03:45 AM		7				7			7	
04:00 AM		18				18			18	
04:15 AM		23				23			23	
04:30 AM		13				13			13	
04:45 AM		19				19			19	
05:00 AM		15				15			15	
05:15 AM		24				24			24	
05:30 AM		19				19			19	
05:45 AM		32				32			32	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		19				19			19	
06:15 AM		32				32			32	
06:30 AM		37				37			37	
06:45 AM		37				37			37	
07:00 AM		33				33			33	
07:15 AM		45				45			45	
07:30 AM		**55**				**55**			**55**	
07:45 AM		41				41			41	
08:00 AM		28				28			28	
08:15 AM		22				22			22	
08:30 AM		29				29			29	
08:45 AM		44				44			44	
09:00 AM		33				33			33	
09:15 AM		22				22			22	
09:30 AM		41				41			41	
09:45 AM		38				38			38	
10:00 AM		23				23			23	
10:15 AM		27				27			27	
10:30 AM		27				27			27	
10:45 AM		33				33			33	
11:00 AM		23				23			23	
11:15 AM		29				29			29	
11:30 AM		36				36			36	
11:45 AM		27				27			27	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		32				32			32	
12:15 PM		30				30			30	
12:30 PM		24				24			24	
12:45 PM		27				27			27	
01:00 PM		27				27			27	
01:15 PM		28				28			28	
01:30 PM		27				27			27	
01:45 PM		28				28			28	
02:00 PM		35				35			35	
02:15 PM		38				38			38	
02:30 PM		36				36			36	
02:45 PM		39				39			39	
03:00 PM		38				38			38	
03:15 PM		37				37			37	
03:30 PM		44				44			44	
03:45 PM		44				44			44	
04:00 PM		44				44			44	
04:15 PM		37				37			37	
04:30 PM		**53**				**53**			**53**	
04:45 PM		32				32			32	
05:00 PM		47				47			47	
05:15 PM		37				37			37	
05:30 PM		32				32			32	
05:45 PM		33				33			33	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		23				23			23	
06:15 PM		21				21			21	
06:30 PM		20				20			20	
06:45 PM		21				21			21	
07:00 PM		24				24			24	
07:15 PM		29				29			29	
07:30 PM		21				21			21	
07:45 PM		16				16			16	
08:00 PM		12				12			12	
08:15 PM		14				14			14	
08:30 PM		14				14			14	
08:45 PM		17				17			17	
09:00 PM		21				21			21	
09:15 PM		13				13			13	
09:30 PM		12				12			12	
09:45 PM		5				5			5	
10:00 PM		9				9			9	
10:15 PM		15				15			15	
10:30 PM		11				11			11	
10:45 PM		5				5			5	
11:00 PM		12				12			12	
11:15 PM		7				7			7	
11:30 PM		7				7			7	
11:45 PM		1				1			1	
Day Total		2194				2194			2194	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		7:30 AM 55				7:30 AM 55			7:30 AM 55	
PM Peak 15-min Vol		4:30 PM 53				4:30 PM 53			4:30 PM 53	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd **QC JOB #:** 16537433

SPECIFIC LOCATION: **DIRECTION:** WB

CITY/STATE: Mojave, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	41-50	1
12:15 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	56-65	2
12:30 AM	0	0	0	0	0	**1**	0	0	1	0	0	0	0	0	2	31-40	1
12:45 AM	0	**1**	0	0	0	0	1	1	0	1	1	0	0	0	5	41-50	2
01:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
01:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
01:30 AM	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1-10	1
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	56-65	2
02:15 AM	0	0	0	0	0	0	0	1	0	2	1	0	1	0	5	56-65	3
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	46-55	1
03:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
03:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
04:00 AM	0	0	0	0	0	0	0	0	1	0	1	1	0	0	3	61-70	2
04:15 AM	0	0	0	0	0	0	0	0	1	1	1	2	0	1	6	61-70	3
04:30 AM	0	0	0	0	0	0	0	0	0	1	2	1	0	1	5	61-70	3
04:45 AM	0	0	0	0	0	0	0	0	1	3	0	0	0	1	5	51-60	4
05:00 AM	0	0	0	0	0	0	0	0	3	0	2	0	0	0	5	46-55	3
05:15 AM	1	0	0	0	0	0	0	0	1	2	3	0	1	0	8	56-65	5
05:30 AM	0	0	0	0	0	0	0	0	2	4	1	0	**2**	0	9	51-60	6
05:45 AM	0	0	0	0	0	0	0	1	1	3	1	2	1	**3**	12	53-62	4
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	36-45	1
06:15 AM	0	0	0	0	0	0	0	3	2	2	1	1	1	0	10	46-55	5
06:30 AM	0	1	0	0	0	0	1	4	1	2	2	2	2	0	15	45-54	5
06:45 AM	0	0	0	0	0	0	0	**5**	5	5	2	1	0	0	18	46-55	10
07:00 AM	0	0	0	0	0	1	1	1	0	3	2	3	0	0	11	56-65	5
07:15 AM	0	0	0	0	0	0	0	4	3	4	3	3	0	0	17	50-59	7
07:30 AM	0	0	0	0	0	1	**2**	1	0	2	4	**5**	1	0	16	61-70	9
07:45 AM	0	0	0	0	0	0	1	2	1	2	4	1	2	0	13	56-65	6
08:00 AM	0	0	0	0	0	0	0	4	3	0	0	0	0	0	7	46-55	7
08:15 AM	0	0	0	0	**1**	0	1	0	0	4	3	1	1	0	11	56-65	7
08:30 AM	0	0	0	0	0	1	0	0	5	**7**	3	1	0	0	17	51-60	12
08:45 AM	0	0	0	0	0	0	0	3	**6**	4	3	1	0	0	17	51-60	10
09:00 AM	0	0	0	0	0	0	2	0	1	4	2	2	1	0	12	56-65	6
09:15 AM	0	0	0	0	0	0	0	3	1	5	0	1	0	0	10	51-60	6
09:30 AM	0	0	0	0	0	0	0	2	6	3	6	1	0	0	18	54-63	9
09:45 AM	0	0	0	**1**	1	0	0	0	5	6	3	0	0	0	16	51-60	11
10:00 AM	0	0	0	0	0	0	0	1	4	2	3	0	1	1	12	51-60	6
10:15 AM	0	0	0	0	0	0	0	0	2	1	3	3	0	0	9	61-70	6
10:30 AM	0	0	0	0	0	0	0	1	2	3	0	3	0	0	9	51-60	5
10:45 AM	0	0	0	0	0	0	0	0	3	2	3	0	1	0	9	51-60	5
11:00 AM	0	0	0	0	0	0	2	3	2	2	1	1	0	0	11	43-52	5
11:15 AM	0	0	**1**	0	0	0	0	0	2	3	**8**	1	0	2	17	56-65	11
11:30 AM	0	0	0	0	0	0	0	1	2	7	2	2	2	3	**19**	52-61	9
11:45 AM	0	0	0	0	0	0	0	1	3	1	2	1	1	1	10	48-57	4
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd **QC JOB #:** 16537433
SPECIFIC LOCATION: **DIRECTION:** WB
CITY/STATE: Mojave, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	**1**	0	0	0	2	0	3	4	3	1	1	0	15	51-60	7
12:15 PM	0	0	0	0	0	0	0	1	4	4	4	1	1	0	15	51-60	8
12:30 PM	0	0	0	0	0	1	1	1	3	3	3	0	0	0	12	51-60	6
12:45 PM	0	0	0	0	0	1	0	1	**8**	5	0	2	0	0	17	51-60	13
01:00 PM	0	0	0	0	0	**2**	1	2	5	7	1	1	1	0	20	51-60	12
01:15 PM	0	0	0	**1**	1	0	2	1	8	2	1	1	1	0	18	51-60	10
01:30 PM	0	0	0	0	0	0	1	4	3	4	0	2	0	0	14	50-59	7
01:45 PM	0	0	0	0	0	0	1	3	3	6	4	1	0	0	18	56-65	10
02:00 PM	0	0	0	0	0	0	**3**	3	2	1	4	1	0	0	14	41-50	6
02:15 PM	0	0	0	0	0	0	2	4	8	5	3	2	1	0	25	51-60	13
02:30 PM	0	0	0	0	0	0	1	2	3	5	4	1	0	0	16	56-65	9
02:45 PM	0	0	0	0	0	0	2	2	4	5	7	1	1	0	22	56-65	12
03:00 PM	0	0	1	0	0	0	0	0	6	9	2	2	0	0	20	51-60	15
03:15 PM	0	**1**	0	0	0	1	2	0	6	2	1	4	1	**1**	19	51-60	8
03:30 PM	0	0	0	0	0	1	1	4	8	9	2	2	0	0	27	51-60	17
03:45 PM	0	0	0	0	0	2	0	5	7	7	4	2	0	1	28	51-60	14
04:00 PM	0	0	0	0	0	0	1	1	3	3	3	3	2	1	17	51-60	6
04:15 PM	0	0	0	0	0	0	0	2	4	6	6	1	1	1	21	56-65	12
04:30 PM	0	0	0	0	0	0	0	3	8	5	**10**	**5**	1	0	**32**	56-65	15
04:45 PM	0	0	0	0	1	0	1	2	3	7	3	3	0	0	20	51-60	10
05:00 PM	0	0	0	0	0	0	0	**7**	5	**10**	5	2	1	0	30	51-60	15
05:15 PM	0	0	0	0	0	0	0	0	3	8	8	4	**5**	0	28	56-65	16
05:30 PM	0	0	0	0	0	0	1	2	5	8	3	1	1	0	21	51-60	13
05:45 PM	0	0	0	0	0	0	1	3	7	9	7	0	0	0	27	51-60	16
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

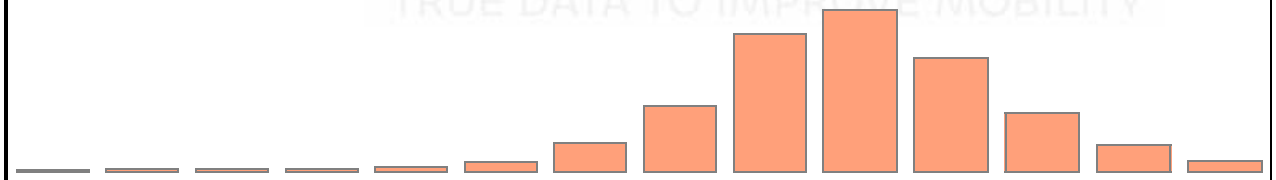
Report generated on 6/17/2024 4:36 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	0	0	1	5	4	1	0	1	12	56-65	9
06:15 PM	0	0	0	0	0	0	0	1	4	1	3	2	2	0	13	50-59	5
06:30 PM	0	0	0	0	0	1	0	2	4	5	2	1	1	0	16	51-60	9
06:45 PM	0	0	0	0	0	0	0	1	2	4	2	5	0	0	14	61-70	7
07:00 PM	0	0	0	0	0	0	1	1	3	4	5	3	2	1	20	56-65	9
07:15 PM	0	0	0	0	0	0	3	2	2	6	1	2	1	0	17	51-60	8
07:30 PM	0	0	0	0	0	0	3	0	0	5	7	1	0	0	16	56-65	12
07:45 PM	0	0	0	0	0	0	0	1	1	3	4	0	0	1	10	56-65	7
08:00 PM	0	0	0	0	0	0	0	1	4	1	0	1	0	0	7	50-59	5
08:15 PM	0	0	0	0	0	0	1	1	5	1	1	1	0	0	10	49-58	6
08:30 PM	0	0	0	0	0	0	0	2	5	1	0	1	0	0	9	46-55	7
08:45 PM	0	0	0	1	1	0	1	1	2	5	0	0	0	0	11	51-60	7
09:00 PM	0	0	0	0	0	0	0	0	5	3	4	0	2	0	14	51-60	8
09:15 PM	0	0	0	0	0	0	0	0	7	1	1	2	0	0	11	51-60	8
09:30 PM	0	0	0	0	0	0	0	0	2	6	1	0	0	0	9	51-60	8
09:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	61-70	2
10:00 PM	0	0	0	0	0	0	1	1	0	4	0	0	0	0	6	51-60	4
10:15 PM	0	0	0	0	0	0	1	1	0	0	1	0	1	0	4	41-50	2
10:30 PM	0	0	0	0	0	0	0	0	3	4	0	0	1	0	8	51-60	7
10:45 PM	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3	46-55	2
11:00 PM	0	0	0	0	3	1	2	0	3	0	1	0	1	0	11	31-40	4
11:15 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	4	41-50	2
11:30 PM	0	0	0	0	0	0	2	2	2	0	0	0	0	0	6	41-50	4
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	61-70	1
Day Total	2	3	3	3	8	15	50	116	247	289	205	106	48	20	1115	51-60	536
Percent	0.2%	0.3%	0.3%	0.3%	0.7%	1.3%	4.5%	10.4%	22.2%	25.9%	18.4%	9.5%	4.3%	1.8%			



AM Peak	1:30 AM	12:45 AM	11:15 AM	9:45 AM	8:15 AM	12:30 AM	7:30 AM	6:45 AM	8:45 AM	8:30 AM	11:15 AM	7:30 AM	5:30 AM	5:45 AM	11:30 AM		
15-min Vol	1	1	1	1	1	1	2	5	6	7	8	5	2	3	19		
PM Peak	12:00 PM	3:15 PM	12:00 PM	1:15 PM	11:00 PM	1:00 PM	2:00 PM	5:00 PM	12:45 PM	5:00 PM	4:30 PM	4:30 PM	5:15 PM	3:15 PM	4:30 PM		
15-min Vol	0	1	1	1	3	2	3	7	8	10	10	5	5	1	32		

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	2	3	3	3	8	15	50	116	247	289	205	106	48	20	1115	51-60	536
Percent	0.2%	0.3%	0.3%	0.3%	0.7%	1.3%	4.5%	10.4%	22.2%	25.9%	18.4%	9.5%	4.3%	1.8%			
Cumulative Percent	0.2%	0.4%	0.7%	1%	1.7%	3%	7.5%	17.9%	40.1%	66%	84.4%	93.9%	98.2%	100%			

ADT
1115



85th Percentile: 65 MPH
Mean Speed(Average): 56 MPH
Median: 56 MPH
Mode: 58 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
12:45 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
01:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:15 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
02:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:15 AM	0	5	0	1	0	0	0	0	0	0	0	0	0	0	6
04:30 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
04:45 AM	0	3	1	0	0	0	0	0	0	0	1	0	0	0	5
05:00 AM	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
05:15 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
05:30 AM	0	7	1	0	0	0	0	0	0	0	1	0	0	0	9
05:45 AM	1	6	5	0	0	0	0	0	0	0	0	0	0	0	12
Day Total															
Percent															
ADT 1115															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

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TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
06:15 AM	0	3	2	0	0	**1**	0	2	2	0	0	0	0	0	10
06:30 AM	0	9	3	1	0	1	0	0	1	0	0	0	0	0	15
06:45 AM	0	5	**6**	0	2	0	1	3	0	0	1	0	0	0	18
07:00 AM	0	4	4	0	1	0	**2**	0	0	0	0	0	0	0	11
07:15 AM	0	8	1	0	**8**	0	0	0	0	0	0	0	0	0	17
07:30 AM	1	7	4	0	4	0	0	0	0	0	0	0	0	0	16
07:45 AM	0	6	3	0	1	1	0	0	0	0	**2**	0	0	0	13
08:00 AM	0	2	1	1	0	0	0	2	0	0	1	0	0	0	7
08:15 AM	0	5	4	0	0	0	0	1	1	0	0	0	0	0	11
08:30 AM	0	7	4	1	2	0	0	2	0	0	1	0	0	0	17
08:45 AM	0	10	5	0	0	0	0	2	0	0	0	0	0	0	17
09:00 AM	0	4	3	1	2	0	0	2	0	0	0	0	0	0	12
09:15 AM	0	5	1	0	2	0	0	1	1	0	0	0	0	0	10
09:30 AM	0	11	3	0	1	0	0	3	0	0	0	0	0	0	18
09:45 AM	0	7	2	0	4	0	0	1	1	0	1	0	0	0	16
10:00 AM	0	7	0	1	1	1	0	1	1	0	0	0	0	0	12
10:15 AM	0	6	2	0	1	0	0	0	0	0	0	0	0	0	9
10:30 AM	1	6	2	0	0	0	0	0	0	0	0	0	0	0	9
10:45 AM	0	3	3	0	3	0	0	0	0	0	0	0	0	0	9
11:00 AM	0	4	3	0	0	0	0	**4**	0	0	0	0	0	0	11
11:15 AM	0	**12**	0	**2**	2	0	0	0	0	0	1	0	0	0	17
11:30 AM	0	8	5	0	0	1	0	2	**3**	0	0	0	0	0	**19**
11:45 AM	0	6	3	0	0	0	0	1	0	0	0	0	0	0	10
Day Total															
Percent															
ADT															
1115															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

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TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	9	3	0	3	0	0	0	0	0	0	0	0	0	15
12:15 PM	0	9	1	0	3	**1**	0	1	0	0	0	0	0	0	15
12:30 PM	0	5	3	**1**	0	1	0	**2**	0	0	0	0	0	0	12
12:45 PM	0	11	4	0	2	0	0	0	0	0	0	0	0	0	17
01:00 PM	0	12	5	0	0	0	0	1	**1**	0	**1**	0	0	0	20
01:15 PM	0	13	2	0	2	0	0	0	0	0	1	0	0	0	18
01:30 PM	0	10	3	0	1	0	0	0	0	0	0	0	0	0	14
01:45 PM	0	12	2	0	2	0	0	1	1	0	0	0	0	0	18
02:00 PM	1	9	4	0	0	0	0	0	0	0	0	0	0	0	14
02:15 PM	0	15	3	0	**4**	1	0	1	1	0	0	0	0	0	25
02:30 PM	2	9	2	0	3	0	0	0	0	0	0	0	0	0	16
02:45 PM	0	13	**7**	0	0	0	0	1	0	0	1	0	0	0	22
03:00 PM	0	16	3	0	1	0	0	0	0	0	0	0	0	0	20
03:15 PM	0	12	6	0	0	0	0	0	0	0	0	0	0	**1**	19
03:30 PM	0	20	4	1	1	0	0	0	1	0	0	0	0	0	27
03:45 PM	0	22	4	0	1	1	0	0	0	0	0	0	0	0	28
04:00 PM	2	12	2	0	0	0	0	1	0	0	0	0	0	0	17
04:15 PM	0	19	1	0	1	0	0	0	0	0	0	0	0	0	21
04:30 PM	0	**25**	6	0	1	0	0	0	0	0	0	0	0	0	**32**
04:45 PM	0	16	3	1	0	0	0	0	0	0	0	0	0	0	20
05:00 PM	0	25	4	0	1	0	0	0	0	0	0	0	0	0	30
05:15 PM	**3**	20	4	0	1	0	0	0	0	0	0	0	0	0	28
05:30 PM	0	18	1	0	1	1	0	0	0	0	0	0	0	0	21
05:45 PM	0	19	6	0	1	0	0	1	0	0	0	0	0	0	27
Day Total															
Percent															
ADT															
1115															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

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TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	10	1	0	0	0	0	1	0	0	0	0	0	0	12
06:15 PM	0	8	4	0	1	0	0	0	0	0	0	0	0	0	13
06:30 PM	0	13	3	0	0	0	0	0	0	0	0	0	0	0	16
06:45 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	0	14
07:00 PM	0	16	4	0	0	0	0	0	0	0	0	0	0	0	20
07:15 PM	0	13	3	0	0	0	0	1	0	0	0	0	0	0	17
07:30 PM	0	13	2	0	1	0	0	0	0	0	0	0	0	0	16
07:45 PM	0	9	0	0	1	0	0	0	0	0	0	0	0	0	10
08:00 PM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
08:15 PM	0	7	3	0	0	0	0	0	0	0	0	0	0	0	10
08:30 PM	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
08:45 PM	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
09:00 PM	1	11	2	0	0	0	0	0	0	0	0	0	0	0	14
09:15 PM	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
09:30 PM	1	5	3	0	0	0	0	0	0	0	0	0	0	0	9
09:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
10:15 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
10:30 PM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
10:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	8	2	0	0	0	0	0	1	0	0	0	0	0	11
11:15 PM	0	3	0	0	0	0	0	1	0	0	0	0	0	0	4
11:30 PM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
11:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	13	737	206	11	68	10	3	39	15	0	12	0	0	1	1115
Percent	1.2%	66.1%	18.5%	1%	6.1%	0.9%	0.3%	3.5%	1.3%	0%	1.1%	0%	0%	0.1%	
ADT 1115															
AM Peak	5:45 AM	11:15 AM	6:45 AM	11:15 AM	7:15 AM	6:15 AM	7:00 AM	11:00 AM	11:30 AM	12:00 AM	7:45 AM	12:00 AM	12:00 AM	12:00 AM	11:30 AM
15-min Vol	1	12	6	2	8	1	2	4	3	0	2	0	0	0	19
PM Peak	5:15 PM	4:30 PM	2:45 PM	12:30 PM	2:15 PM	12:15 PM	12:00 PM	12:30 PM	1:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	3:15 PM	4:30 PM
15-min Vol	3	25	7	1	4	1	0	2	1	0	1	0	0	1	32

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Backus Rd W of Mojave Tropico Rd
SPECIFIC LOCATION:
CITY/STATE: Mojave, CA

QC JOB #: 16537433
DIRECTION: WB
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	13	737	206	11	68	10	3	39	15	0	12	0	0	1	1115
Percent	1.2%	66.1%	18.5%	1%	6.1%	0.9%	0.3%	3.5%	1.3%	0%	1.1%	0%	0%	0.1%	
ADT 1115															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd | **QC JOB #:** 16537433

SPECIFIC LOCATION: | **DIRECTION:** WB

CITY/STATE: Mojave, CA | **DATE:** Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		2				2			2	
12:15 AM		2				2			2	
12:30 AM		2				2			2	
12:45 AM		5				5			5	
01:00 AM		1				1			1	
01:15 AM		1				1			1	
01:30 AM		1				1			1	
01:45 AM		0				0			0	
02:00 AM		2				2			2	
02:15 AM		5				5			5	
02:30 AM		0				0			0	
02:45 AM		1				1			1	
03:00 AM		0				0			0	
03:15 AM		2				2			2	
03:30 AM		1				1			1	
03:45 AM		1				1			1	
04:00 AM		3				3			3	
04:15 AM		6				6			6	
04:30 AM		5				5			5	
04:45 AM		5				5			5	
05:00 AM		5				5			5	
05:15 AM		8				8			8	
05:30 AM		9				9			9	
05:45 AM		12				12			12	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		2				2			2	
06:15 AM		10				10			10	
06:30 AM		15				15			15	
06:45 AM		18				18			18	
07:00 AM		11				11			11	
07:15 AM		17				17			17	
07:30 AM		16				16			16	
07:45 AM		13				13			13	
08:00 AM		7				7			7	
08:15 AM		11				11			11	
08:30 AM		17				17			17	
08:45 AM		17				17			17	
09:00 AM		12				12			12	
09:15 AM		10				10			10	
09:30 AM		18				18			18	
09:45 AM		16				16			16	
10:00 AM		12				12			12	
10:15 AM		9				9			9	
10:30 AM		9				9			9	
10:45 AM		9				9			9	
11:00 AM		11				11			11	
11:15 AM		17				17			17	
11:30 AM		**19**				**19**			**19**	
11:45 AM		10				10			10	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
SPECIFIC LOCATION:
DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		15				15			15	
12:15 PM		15				15			15	
12:30 PM		12				12			12	
12:45 PM		17				17			17	
01:00 PM		20				20			20	
01:15 PM		18				18			18	
01:30 PM		14				14			14	
01:45 PM		18				18			18	
02:00 PM		14				14			14	
02:15 PM		25				25			25	
02:30 PM		16				16			16	
02:45 PM		22				22			22	
03:00 PM		20				20			20	
03:15 PM		19				19			19	
03:30 PM		27				27			27	
03:45 PM		28				28			28	
04:00 PM		17				17			17	
04:15 PM		21				21			21	
04:30 PM		**32**				**32**			**32**	
04:45 PM		20				20			20	
05:00 PM		30				30			30	
05:15 PM		28				28			28	
05:30 PM		21				21			21	
05:45 PM		27				27			27	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Backus Rd W of Mojave Tropico Rd
QC JOB #: 16537433
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DIRECTION: WB
CITY/STATE: Mojave, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		12				12			12	
06:15 PM		13				13			13	
06:30 PM		16				16			16	
06:45 PM		14				14			14	
07:00 PM		20				20			20	
07:15 PM		17				17			17	
07:30 PM		16				16			16	
07:45 PM		10				10			10	
08:00 PM		7				7			7	
08:15 PM		10				10			10	
08:30 PM		9				9			9	
08:45 PM		11				11			11	
09:00 PM		14				14			14	
09:15 PM		11				11			11	
09:30 PM		9				9			9	
09:45 PM		2				2			2	
10:00 PM		6				6			6	
10:15 PM		4				4			4	
10:30 PM		8				8			8	
10:45 PM		3				3			3	
11:00 PM		11				11			11	
11:15 PM		4				4			4	
11:30 PM		6				6			6	
11:45 PM		1				1			1	
Day Total		1115				1115			1115	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		11:30 AM 19				11:30 AM 19			11:30 AM 19	
PM Peak 15-min Vol		4:30 PM 32				4:30 PM 32			4:30 PM 32	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3	56-65	2
12:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	51-60	1
12:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	56-65	1
12:45 AM	0	0	0	0	0	0	0	1	1	0	2	0	0	0	4	56-65	2
01:00 AM	0	0	0	0	0	0	0	2	1	0	2	0	0	0	5	46-55	3
01:15 AM	1	0	0	0	0	0	2	0	1	0	0	1	0	0	5	36-45	2
01:30 AM	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3	46-55	2
01:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:15 AM	0	0	0	0	0	0	0	0	3	2	1	1	0	0	7	51-60	5
02:30 AM	0	0	0	0	0	0	2	0	1	2	0	0	0	0	5	51-60	3
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	56-65	2
03:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	46-55	1
03:30 AM	0	0	0	0	0	0	0	0	0	1	3	1	0	0	5	58-67	4
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
04:00 AM	0	0	0	0	0	0	0	0	1	1	1	1	1	0	5	51-60	2
04:15 AM	0	0	0	0	0	0	1	0	2	0	1	1	0	1	6	46-55	2
04:30 AM	0	0	0	0	0	0	0	1	0	2	2	0	1	0	6	56-65	4
04:45 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	56-65	3
05:00 AM	0	0	0	0	0	1	0	1	1	6	3	1	0	0	13	56-65	9
05:15 AM	0	0	0	0	0	0	0	1	4	3	3	2	0	3	16	51-60	7
05:30 AM	0	0	0	0	1	0	2	2	3	3	9	2	2	1	25	56-65	12
05:45 AM	0	0	0	0	2	0	0	0	2	4	2	4	3	0	17	66-75	7
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	0	1	0	7	3	2	1	**4**	18	56-65	10
06:15 AM	0	0	0	0	1	0	0	0	2	1	3	4	0	0	11	61-70	7
06:30 AM	0	0	**1**	1	1	0	1	1	2	6	9	3	1	4	**30**	56-65	15
06:45 AM	0	0	0	0	0	0	1	0	5	**8**	7	1	2	0	24	56-65	15
07:00 AM	0	0	1	1	**4**	**2**	2	2	4	4	6	2	1	0	29	56-65	10
07:15 AM	0	0	0	0	0	0	0	1	1	7	4	2	1	0	16	56-65	11
07:30 AM	0	0	0	**2**	1	0	1	3	0	6	**10**	**6**	0	0	29	56-65	16
07:45 AM	0	0	1	0	2	2	**4**	3	**7**	4	1	4	1	0	29	51-60	11
08:00 AM	0	0	0	0	0	0	0	1	7	6	2	2	0	0	18	51-60	13
08:15 AM	0	0	0	0	0	0	1	3	5	2	3	4	1	0	19	46-55	8
08:30 AM	1	0	0	1	0	2	0	**5**	2	3	2	1	0	0	17	46-55	7
08:45 AM	0	0	0	0	0	0	1	1	2	8	2	0	0	0	14	55-64	10
09:00 AM	0	0	0	0	0	1	0	0	2	3	2	2	0	0	10	53-62	5
09:15 AM	0	0	0	0	0	0	0	1	2	3	1	0	0	0	7	51-60	5
09:30 AM	0	0	0	0	1	0	0	1	2	3	1	0	0	0	8	51-60	5
09:45 AM	0	0	0	0	0	0	0	0	5	0	1	0	1	0	7	46-55	5
10:00 AM	0	0	0	0	0	0	0	0	4	1	1	0	0	0	6	51-60	5
10:15 AM	0	0	0	0	0	0	0	0	3	2	1	0	0	0	6	51-60	5
10:30 AM	0	0	0	0	0	0	0	0	1	2	2	3	1	0	9	61-70	5
10:45 AM	0	0	0	0	0	0	0	1	1	1	1	0	0	0	4	46-55	2
11:00 AM	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4	56-65	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	1	0	4	61-70	3
11:30 AM	0	0	0	0	0	0	0	0	1	0	2	1	1	0	5	61-70	3
11:45 AM	0	0	0	0	0	0	0	0	1	2	0	2	1	0	6	66-75	3
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	0	0	0	0	0	1	0	1	2	1	2	1	8	61-70	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	61-70	1
12:45 PM	0	0	0	0	0	0	0	1	1	0	1	1	0	0	4	46-55	2
01:00 PM	0	0	0	0	0	0	0	2	0	1	0	0	1	0	4	41-50	2
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	3	6	61-70	3
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	61-70	1
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	66-75	1
02:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	51-60	1
02:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	61-70	1
02:45 PM	0	0	0	0	0	0	0	0	0	3	0	2	0	0	5	51-60	3
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	66-75	2
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	61-70	2
03:30 PM	0	0	0	0	0	0	0	0	0	2	0	1	0	3	6	51-60	2
03:45 PM	0	0	0	0	0	0	0	0	0	1	1	1	0	2	5	56-65	2
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	66-75	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	3	56-65	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	2	0	2	5	61-70	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	3	1	1	6	63-72	4
05:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3	56-65	2
05:30 PM	0	0	0	0	0	0	0	0	0	3	1	2	**4**	0	10	66-75	6
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	1	2	5	10	66-75	3
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

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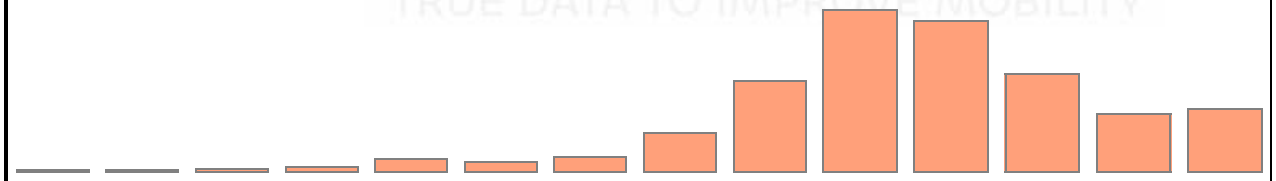
Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	0	1	1	5	4	4	4	1	20	56-65	9
06:15 PM	0	0	0	0	0	0	0	1	1	4	4	3	0	5	18	56-65	8
06:30 PM	0	0	0	0	0	0	0	0	2	8	5	**8**	4	4	**31**	56-65	13
06:45 PM	0	0	0	0	0	0	0	0	1	**9**	5	5	4	3	27	56-65	14
07:00 PM	0	0	0	0	0	**2**	0	1	**5**	7	2	2	3	3	25	51-60	12
07:15 PM	0	0	0	0	0	0	0	0	2	2	**10**	4	2	5	25	61-70	14
07:30 PM	0	0	0	0	0	1	0	1	2	7	7	2	3	1	24	56-65	14
07:45 PM	0	0	0	0	**1**	0	0	0	2	5	5	1	0	1	15	56-65	10
08:00 PM	0	0	0	0	0	0	0	0	1	2	5	4	1	3	16	61-70	9
08:15 PM	0	0	0	0	0	0	0	0	4	5	3	1	0	0	13	51-60	9
08:30 PM	0	0	0	0	1	0	0	0	2	4	3	0	1	0	11	56-65	7
08:45 PM	0	0	0	0	0	0	0	**3**	2	5	6	1	3	1	21	56-65	11
09:00 PM	0	0	0	**1**	0	0	0	1	1	2	2	7	4	3	21	66-75	11
09:15 PM	0	0	0	0	0	0	0	0	1	3	4	3	0	2	13	56-65	7
09:30 PM	0	0	0	0	0	0	0	0	4	5	4	3	1	1	18	53-62	9
09:45 PM	0	0	0	0	0	0	0	0	0	1	3	0	3	2	9	56-65	4
10:00 PM	0	0	0	0	0	0	0	1	0	3	1	0	1	0	6	56-65	4
10:15 PM	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	56-65	5
10:30 PM	0	0	0	0	1	0	0	1	1	1	2	0	0	0	6	56-65	3
10:45 PM	0	0	0	0	0	0	0	0	1	1	4	1	0	0	7	60-69	5
11:00 PM	0	0	0	0	0	0	0	0	1	1	1	1	0	0	4	51-60	2
11:15 PM	0	0	0	0	0	0	0	0	1	2	3	1	0	1	8	56-65	5
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**	6	71-80	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	3	1	6	71-80	3
Day Total	2	0	3	6	16	11	18	49	119	210	197	128	74	81	914	56-65	407
Percent	0.2%	0%	0.3%	0.7%	1.8%	1.2%	2%	5.4%	13%	23%	21.6%	14%	8.1%	8.9%			
AM Peak	1:15 AM	12:00 AM	6:30 AM	7:30 AM	7:00 AM	7:00 AM	7:45 AM	8:30 AM	7:45 AM	6:45 AM	7:30 AM	7:30 AM	5:45 AM	6:00 AM	6:30 AM		
15-min Vol	1	0	1	2	4	2	4	5	7	8	10	6	3	4	30		
PM Peak	12:00 PM	12:00 PM	12:00 PM	9:00 PM	7:45 PM	7:00 PM	12:00 PM	8:45 PM	7:00 PM	6:45 PM	7:15 PM	6:30 PM	5:30 PM	11:30 PM	6:30 PM		
15-min Vol	0	0	0	1	1	2	0	3	5	9	10	8	4	6	31		



Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total **Percent**	2 0.2%	0 0%	3 0.3%	6 0.7%	16 1.8%	11 1.2%	18 2%	49 5.4%	119 13%	210 23%	197 21.6%	128 14%	74 8.1%	81 8.9%	914	56-65	407
Cumulative Percent	0.2%	0.2%	0.5%	1.2%	3%	4.2%	6.1%	11.5%	24.5%	47.5%	69%	83%	91.1%	100%			

ADT
914



85th Percentile: 71 MPH
Mean Speed(Average): 60 MPH
Median: 60 MPH
Mode: 58 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
12:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
01:15 AM	0	3	0	0	0	0	0	1	0	0	0	0	0	1	5
01:30 AM	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3
01:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7
02:30 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
04:15 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
04:30 AM	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
04:45 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00 AM	0	7	5	0	0	0	0	0	0	0	1	0	0	0	13
05:15 AM	0	11	2	0	2	0	0	1	0	0	0	0	0	0	16
05:30 AM	0	17	3	1	1	0	0	1	0	0	2	0	0	0	25
05:45 AM	0	13	2	0	0	0	0	0	0	0	2	0	0	0	17
Day Total															
Percent															
ADT 914															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	1	9	7	0	1	0	0	0	0	0	0	0	0	0	18
06:15 AM	0	6	3	0	1	0	0	0	0	0	1	0	0	0	11
06:30 AM	0	20	3	1	4	0	0	2	0	0	0	0	0	0	30
06:45 AM	0	13	9	0	1	0	0	1	0	0	0	0	0	0	24
07:00 AM	0	11	7	0	5	0	0	3	1	0	2	0	0	0	29
07:15 AM	0	11	4	0	1	0	0	0	0	0	0	0	0	0	16
07:30 AM	1	17	6	1	3	0	0	1	0	0	0	0	0	0	29
07:45 AM	1	13	5	1	3	0	0	1	0	0	5	0	0	0	29
08:00 AM	0	12	6	0	0	0	0	0	0	0	0	0	0	0	18
08:15 AM	0	15	1	1	2	0	0	0	0	0	0	0	0	0	19
08:30 AM	0	7	1	0	3	0	0	3	0	0	1	0	0	2	17
08:45 AM	0	8	2	1	2	0	0	0	0	0	1	0	0	0	14
09:00 AM	0	6	1	0	2	0	0	0	0	0	1	0	0	0	10
09:15 AM	0	2	3	1	0	0	0	1	0	0	0	0	0	0	7
09:30 AM	0	3	3	0	1	0	0	0	0	0	1	0	0	0	8
09:45 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
10:00 AM	0	2	2	1	0	1	0	0	0	0	0	0	0	0	6
10:15 AM	0	3	1	2	0	0	0	0	0	0	0	0	0	0	6
10:30 AM	0	2	5	1	1	0	0	0	0	0	0	0	0	0	9
10:45 AM	0	1	1	0	1	0	0	1	0	0	0	0	0	0	4
11:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
11:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	4
11:30 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	5
11:45 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	1	6
Day Total															
Percent															
ADT 914															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	4	3	1	0	0	0	0	0	0	0	0	0	0	8
12:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	4
01:00 PM	0	2	0	0	0	0	0	1	1	0	0	0	0	0	4
01:15 PM	0	0	2	2	2	0	0	0	0	0	0	0	0	0	6
01:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
01:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
02:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
02:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
02:45 PM	0	1	1	1	2	0	0	0	0	0	0	0	0	0	5
03:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:15 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:30 PM	0	3	0	1	1	0	0	0	0	0	0	0	0	1	6
03:45 PM	0	3	0	0	2	0	0	0	0	0	0	0	0	0	5
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	3	0	0	2	0	0	0	0	0	0	0	0	0	5
05:00 PM	0	4	0	0	2	0	0	0	0	0	0	0	0	0	6
05:15 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	4	2	0	4	0	0	0	0	0	0	0	0	0	10
05:45 PM	0	4	5	0	0	0	0	0	0	0	0	0	0	1	10
Day Total															
Percent															
ADT 914															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	11	4	0	3	0	0	1	0	0	0	0	0	1	20
06:15 PM	**1**	10	6	0	0	0	0	1	0	0	0	0	0	0	18
06:30 PM	0	**23**	4	0	3	0	0	1	0	0	0	0	0	0	**31**
06:45 PM	0	14	**9**	0	4	0	0	0	0	0	0	0	0	0	27
07:00 PM	0	17	5	0	2	**1**	0	0	0	0	0	0	0	0	25
07:15 PM	0	18	6	0	1	0	0	0	0	0	0	0	0	0	25
07:30 PM	0	16	7	0	0	0	0	0	1	0	0	0	0	0	24
07:45 PM	0	14	1	0	0	0	0	0	0	0	0	0	0	0	15
08:00 PM	0	10	4	0	0	0	0	**2**	0	0	0	0	0	0	16
08:15 PM	0	9	4	0	0	0	0	0	0	0	0	0	0	0	13
08:30 PM	0	7	4	0	0	0	0	0	0	0	0	0	0	0	11
08:45 PM	0	15	5	0	1	0	0	0	0	0	0	0	0	0	21
09:00 PM	0	14	4	0	1	0	0	1	0	0	0	0	0	1	21
09:15 PM	0	9	2	0	2	0	0	0	0	0	0	0	0	0	13
09:30 PM	0	14	4	0	0	0	0	0	0	0	0	0	0	0	18
09:45 PM	0	7	0	0	2	0	0	0	0	0	0	0	0	0	9
10:00 PM	1	4	0	0	1	0	0	0	0	0	0	0	0	0	6
10:15 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
10:30 PM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
10:45 PM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
11:00 PM	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4
11:15 PM	0	4	1	0	1	0	0	2	0	0	0	0	0	0	8
11:30 PM	0	0	4	0	1	0	0	0	0	0	0	0	0	1	6
11:45 PM	0	1	5	0	0	0	0	0	0	0	0	0	0	0	6
Day Total	5	546	195	19	90	3	0	26	4	0	17	0	0	9	914
Percent	0.5%	59.7%	21.3%	2.1%	9.8%	0.3%	0%	2.8%	0.4%	0%	1.9%	0%	0%	1%	
ADT 914															
AM Peak	6:00 AM	6:30 AM	6:45 AM	10:15 AM	7:00 AM	10:00 AM	12:00 AM	7:00 AM	1:30 AM	12:00 AM	7:45 AM	12:00 AM	12:00 AM	8:30 AM	6:30 AM
15-min Vol	1	20	9	2	5	1	0	3	1	0	5	0	0	2	30
PM Peak	6:15 PM	6:30 PM	6:45 PM	12:45 PM	5:30 PM	7:00 PM	12:00 PM	8:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	3:30 PM	6:30 PM
15-min Vol	1	23	9	2	4	1	0	2	1	0	0	0	0	1	31

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
SPECIFIC LOCATION:
CITY/STATE: Rosamond, CA

QC JOB #: 16537434
DIRECTION: NB
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	5	546	195	19	90	3	0	26	4	0	17	0	0	9	914
Percent	0.5%	59.7%	21.3%	2.1%	9.8%	0.3%	0%	2.8%	0.4%	0%	1.9%	0%	0%	1%	
ADT 914															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd | **QC JOB #:** 16537434

SPECIFIC LOCATION: | **DIRECTION:** NB

CITY/STATE: Rosamond, CA | **DATE:** Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		3				3			3	
12:15 AM		2				2			2	
12:30 AM		2				2			2	
12:45 AM		4				4			4	
01:00 AM		5				5			5	
01:15 AM		5				5			5	
01:30 AM		3				3			3	
01:45 AM		1				1			1	
02:00 AM		0				0			0	
02:15 AM		7				7			7	
02:30 AM		5				5			5	
02:45 AM		0				0			0	
03:00 AM		2				2			2	
03:15 AM		2				2			2	
03:30 AM		5				5			5	
03:45 AM		0				0			0	
04:00 AM		5				5			5	
04:15 AM		6				6			6	
04:30 AM		6				6			6	
04:45 AM		3				3			3	
05:00 AM		13				13			13	
05:15 AM		16				16			16	
05:30 AM		25				25			25	
05:45 AM		17				17			17	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		18				18			18	
06:15 AM		11				11			11	
06:30 AM		**30**				**30**			**30**	
06:45 AM		24				24			24	
07:00 AM		29				29			29	
07:15 AM		16				16			16	
07:30 AM		29				29			29	
07:45 AM		29				29			29	
08:00 AM		18				18			18	
08:15 AM		19				19			19	
08:30 AM		17				17			17	
08:45 AM		14				14			14	
09:00 AM		10				10			10	
09:15 AM		7				7			7	
09:30 AM		8				8			8	
09:45 AM		7				7			7	
10:00 AM		6				6			6	
10:15 AM		6				6			6	
10:30 AM		9				9			9	
10:45 AM		4				4			4	
11:00 AM		4				4			4	
11:15 AM		4				4			4	
11:30 AM		5				5			5	
11:45 AM		6				6			6	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		8				8			8	
12:15 PM		1				1			1	
12:30 PM		1				1			1	
12:45 PM		4				4			4	
01:00 PM		4				4			4	
01:15 PM		6				6			6	
01:30 PM		2				2			2	
01:45 PM		1				1			1	
02:00 PM		2				2			2	
02:15 PM		1				1			1	
02:30 PM		1				1			1	
02:45 PM		5				5			5	
03:00 PM		3				3			3	
03:15 PM		3				3			3	
03:30 PM		6				6			6	
03:45 PM		5				5			5	
04:00 PM		0				0			0	
04:15 PM		2				2			2	
04:30 PM		3				3			3	
04:45 PM		5				5			5	
05:00 PM		6				6			6	
05:15 PM		3				3			3	
05:30 PM		10				10			10	
05:45 PM		10				10			10	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		20				20			20	
06:15 PM		18				18			18	
06:30 PM		**31**				**31**			**31**	
06:45 PM		27				27			27	
07:00 PM		25				25			25	
07:15 PM		25				25			25	
07:30 PM		24				24			24	
07:45 PM		15				15			15	
08:00 PM		16				16			16	
08:15 PM		13				13			13	
08:30 PM		11				11			11	
08:45 PM		21				21			21	
09:00 PM		21				21			21	
09:15 PM		13				13			13	
09:30 PM		18				18			18	
09:45 PM		9				9			9	
10:00 PM		6				6			6	
10:15 PM		5				5			5	
10:30 PM		6				6			6	
10:45 PM		7				7			7	
11:00 PM		4				4			4	
11:15 PM		8				8			8	
11:30 PM		6				6			6	
11:45 PM		6				6			6	
Day Total		914				914			914	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		6:30 AM 30				6:30 AM 30			6:30 AM 30	
PM Peak 15-min Vol		6:30 PM 31				6:30 PM 31			6:30 PM 31	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	1	1	1	1	2	6	56-65	2
12:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	51-60	1
12:30 AM	0	0	0	0	0	0	0	1	1	1	1	0	1	0	5	46-55	2
12:45 AM	0	0	0	0	0	0	1	1	1	0	3	0	0	0	6	56-65	3
01:00 AM	0	0	0	0	0	0	1	2	1	2	3	0	0	0	9	56-65	5
01:15 AM	1	0	0	0	0	0	2	0	2	0	1	1	0	0	7	36-45	2
01:30 AM	0	0	0	0	1	0	0	1	1	1	0	1	1	0	6	46-55	2
01:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	41-50	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
02:15 AM	0	0	0	0	0	0	0	0	4	2	1	1	0	0	8	51-60	6
02:30 AM	0	0	0	0	0	0	2	0	2	3	1	0	1	1	10	51-60	5
02:45 AM	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	51-60	2
03:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	2	0	4	66-75	2
03:15 AM	0	0	0	0	0	0	0	1	2	3	1	0	1	0	8	51-60	5
03:30 AM	0	0	0	0	0	0	0	0	0	2	4	1	0	1	8	56-65	6
03:45 AM	0	0	0	0	2	0	0	0	2	1	4	3	3	2	17	61-70	7
04:00 AM	0	0	0	0	0	0	0	0	1	7	7	1	3	2	21	56-65	14
04:15 AM	0	0	0	0	0	0	1	0	3	5	3	6	2	4	24	61-70	9
04:30 AM	0	0	0	0	0	0	0	1	1	7	6	4	3	0	22	56-65	13
04:45 AM	0	0	0	0	0	0	0	0	3	14	4	5	4	1	31	56-65	18
05:00 AM	0	0	0	0	0	1	0	1	5	18	16	7	1	2	51	56-65	34
05:15 AM	0	0	0	0	0	0	0	1	8	14	12	9	6	**6**	56	56-65	26
05:30 AM	0	0	0	0	1	0	2	2	4	6	20	**17**	3	2	57	61-70	37
05:45 AM	0	0	0	0	2	0	0	2	5	15	15	13	**8**	5	65	56-65	30
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

TRUE DATA TO IMPROVE MOBILITY

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	0	1	4	19	16	10	3	6	59	56-65	35
06:15 AM	0	0	0	0	1	0	0	0	3	5	15	6	3	2	35	61-70	21
06:30 AM	0	0	**1**	1	1	0	1	4	7	15	23	13	6	6	**78**	56-65	38
06:45 AM	0	0	0	0	0	0	1	0	8	20	18	6	3	4	60	56-65	38
07:00 AM	0	0	1	1	**4**	**2**	2	2	10	14	20	6	4	2	68	56-65	34
07:15 AM	0	0	0	0	0	0	0	2	9	16	20	11	4	3	65	56-65	36
07:30 AM	0	0	0	**2**	1	0	1	4	4	21	**24**	15	4	0	76	56-65	45
07:45 AM	0	0	1	0	2	2	**4**	3	**13**	12	7	14	6	2	66	51-60	25
08:00 AM	0	0	0	0	0	0	0	1	9	14	5	6	1	2	38	51-60	23
08:15 AM	0	0	0	0	0	0	1	3	10	5	8	6	4	0	37	51-60	15
08:30 AM	1	0	0	1	0	2	0	5	8	17	16	3	0	2	55	56-65	33
08:45 AM	0	0	0	0	0	0	1	3	6	**22**	12	2	2	0	48	56-65	34
09:00 AM	1	0	0	0	0	1	0	1	9	14	8	7	0	0	41	51-60	23
09:15 AM	0	0	0	0	0	0	0	**15**	9	8	2	1	0	1	36	46-55	24
09:30 AM	**3**	**1**	0	0	1	0	0	6	7	16	6	2	0	0	42	51-60	23
09:45 AM	1	0	0	0	0	0	0	2	10	9	3	3	1	1	30	51-60	19
10:00 AM	0	0	0	0	0	0	0	5	9	10	6	1	0	0	31	51-60	19
10:15 AM	1	0	0	0	0	0	1	0	5	10	8	2	1	0	28	56-65	18
10:30 AM	0	0	0	0	0	0	0	1	5	12	8	7	1	0	34	56-65	20
10:45 AM	1	0	0	0	0	0	0	1	4	9	10	3	1	0	29	56-65	19
11:00 AM	0	0	0	0	0	0	0	0	7	11	8	4	4	1	35	56-65	19
11:15 AM	0	0	0	0	0	1	0	0	4	8	6	2	1	1	23	56-65	14
11:30 AM	1	0	0	0	0	0	0	2	4	7	10	3	1	1	29	56-65	17
11:45 AM	0	0	0	0	0	0	0	1	12	15	1	4	2	1	36	51-60	27
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

TRUE DATA TO IMPROVE MOBILITY

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	0	0	0	0	0	2	10	9	5	5	6	1	38	51-60	19
12:15 PM	0	0	0	0	0	0	0	0	5	9	8	1	1	1	25	56-65	17
12:30 PM	0	0	0	0	0	0	0	0	1	3	9	4	1	2	20	61-70	13
12:45 PM	**6**	**1**	0	0	0	0	0	2	2	4	7	5	0	0	27	61-70	12
01:00 PM	2	0	0	0	0	0	0	3	3	6	8	5	4	1	32	56-65	14
01:15 PM	0	0	0	0	0	0	0	0	1	4	1	5	1	8	20	64-73	6
01:30 PM	1	0	0	0	0	0	0	0	3	5	5	7	5	5	31	61-70	12
01:45 PM	1	0	0	0	0	1	**1**	0	0	2	2	7	4	6	24	66-75	11
02:00 PM	0	0	0	0	0	0	0	0	0	2	4	5	5	5	21	66-75	10
02:15 PM	0	0	0	0	0	0	0	2	0	8	5	8	3	4	30	56-65	13
02:30 PM	0	0	0	0	0	0	0	0	0	6	**15**	9	5	1	36	61-70	24
02:45 PM	0	0	0	0	0	0	0	0	3	4	6	9	9	3	34	66-75	18
03:00 PM	0	0	0	0	0	0	0	0	3	7	6	2	3	3	24	56-65	13
03:15 PM	0	0	0	0	0	0	0	0	7	7	8	7	5	3	37	61-70	15
03:30 PM	1	0	0	0	**1**	0	0	0	2	5	10	7	**11**	5	42	66-75	18
03:45 PM	0	0	0	0	0	1	0	1	10	7	7	4	3	4	37	51-60	17
04:00 PM	0	0	0	0	0	0	0	**8**	**11**	4	6	6	2	4	41	46-55	19
04:15 PM	0	0	0	0	0	0	0	0	1	3	10	3	6	8	31	56-65	13
04:30 PM	0	0	0	0	0	0	0	1	3	4	4	9	1	5	27	61-70	13
04:45 PM	0	0	0	0	0	0	0	0	1	4	9	9	4	3	30	61-70	18
05:00 PM	0	1	0	0	0	1	0	0	2	2	8	**12**	2	3	31	61-70	20
05:15 PM	0	0	0	0	0	0	0	0	8	6	10	3	2	4	33	56-65	16
05:30 PM	0	0	0	0	0	0	0	0	2	8	2	8	8	2	30	66-75	16
05:45 PM	0	0	0	0	0	0	0	1	1	4	6	2	3	6	23	56-65	10
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

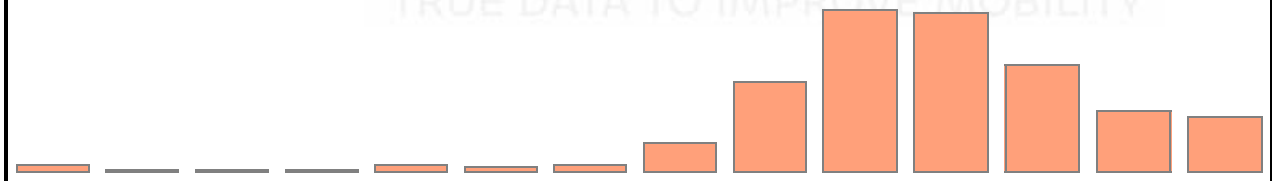
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	1	1	2	7	8	9	6	4	38	61-70	17
06:15 PM	0	0	0	0	0	0	0	1	2	4	9	6	1	8	31	61-70	15
06:30 PM	0	0	0	0	0	0	0	1	3	9	7	12	7	4	43	61-70	19
06:45 PM	0	0	0	0	0	0	0	0	1	**13**	7	9	6	6	42	56-65	20
07:00 PM	0	0	0	0	0	**2**	0	1	5	9	5	3	3	4	32	51-60	14
07:15 PM	0	0	0	0	0	0	0	0	8	6	10	7	4	**9**	**44**	61-70	17
07:30 PM	0	0	0	0	0	1	0	1	3	13	12	6	4	3	43	56-65	25
07:45 PM	0	0	0	0	1	0	1	0	3	7	6	7	0	1	26	59-68	13
08:00 PM	0	0	0	0	0	0	0	0	4	2	8	6	2	6	28	61-70	14
08:15 PM	0	0	0	0	0	0	0	0	7	7	4	3	1	2	24	51-60	14
08:30 PM	0	0	0	0	1	0	0	1	3	4	6	0	2	0	17	56-65	10
08:45 PM	0	0	0	0	0	0	0	5	3	9	9	1	5	3	35	56-65	18
09:00 PM	0	0	0	**1**	0	0	0	1	2	3	4	8	6	4	29	66-75	14
09:15 PM	0	0	0	0	0	0	0	1	1	4	4	4	1	3	18	56-65	8
09:30 PM	0	0	0	0	0	0	0	0	7	6	5	3	1	1	23	51-60	13
09:45 PM	0	0	0	0	0	0	1	0	0	1	3	1	3	2	11	58-67	4
10:00 PM	0	0	0	0	0	0	0	1	3	5	4	1	2	0	16	56-65	9
10:15 PM	0	0	0	0	0	0	0	3	1	7	3	0	1	0	15	56-65	10
10:30 PM	0	0	0	0	1	0	0	3	2	3	2	0	0	0	11	46-55	5
10:45 PM	0	0	0	0	0	0	0	1	1	1	5	1	2	1	12	59-68	6
11:00 PM	0	0	0	0	0	0	0	0	1	2	2	1	0	1	7	56-65	4
11:15 PM	0	0	0	0	0	0	0	0	1	2	4	1	0	1	9	56-65	6
11:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	7	9	71-80	1
11:45 PM	0	0	0	0	0	0	0	0	0	1	2	0	3	1	7	71-80	3
Day Total	21	3	3	6	20	15	25	117	365	663	655	440	248	221	2802	56-65	1318
Percent	0.7%	0.1%	0.1%	0.2%	0.7%	0.5%	0.9%	4.2%	13%	23.7%	23.4%	15.7%	8.9%	7.9%			
AM Peak	9:30 AM	9:30 AM	6:30 AM	7:30 AM	7:00 AM	7:00 AM	7:45 AM	9:15 AM	7:45 AM	8:45 AM	7:30 AM	5:30 AM	5:45 AM	5:15 AM	6:30 AM		
15-min Vol	3	1	1	2	4	2	4	15	13	22	24	17	8	6	78		
PM Peak	12:45 PM	12:45 PM	12:00 PM	9:00 PM	3:30 PM	7:00 PM	1:45 PM	4:00 PM	4:00 PM	6:45 PM	2:30 PM	5:00 PM	3:30 PM	7:15 PM	7:15 PM		
15-min Vol	6	1	0	1	1	2	1	8	11	13	15	12	11	9	44		



Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total **Percent**	21 0.7%	3 0.1%	3 0.1%	6 0.2%	20 0.7%	15 0.5%	25 0.9%	117 4.2%	365 13%	663 23.7%	655 23.4%	440 15.7%	248 8.9%	221 7.9%	2802	56-65	1318
Cumulative Percent	0.7%	0.9%	1%	1.2%	1.9%	2.4%	3.3%	7.5%	20.5%	44.2%	67.6%	83.3%	92.1%	100%			

ADT
2802



85th Percentile: 70 MPH
Mean Speed(Average): 61 MPH
Median: 61 MPH
Mode: 58 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	1	2	0	1	0	0	0	0	0	0	0	0	2	6
12:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
12:45 AM	0	5	0	0	0	0	0	1	0	0	0	0	0	0	6
01:00 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	1	9
01:15 AM	0	4	1	0	0	0	0	1	0	0	0	0	0	1	7
01:30 AM	0	4	0	1	0	0	0	0	1	0	0	0	0	0	6
01:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	4	3	0	0	0	0	0	1	0	0	0	0	0	8
02:30 AM	0	8	1	0	1	0	0	0	0	0	0	0	0	0	10
02:45 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
03:15 AM	0	7	0	0	0	0	0	0	0	0	1	0	0	0	8
03:30 AM	0	5	2	0	1	0	0	0	0	0	0	0	0	0	8
03:45 AM	0	10	5	1	0	0	0	0	1	0	0	0	0	0	17
04:00 AM	0	16	3	0	1	0	0	0	1	0	0	0	0	0	21
04:15 AM	0	17	4	0	3	0	0	0	0	0	0	0	0	0	24
04:30 AM	0	13	5	0	3	0	0	0	0	0	1	0	0	0	22
04:45 AM	0	24	4	0	1	0	0	0	0	0	2	0	0	0	31
05:00 AM	0	34	11	0	4	0	0	0	1	0	1	0	0	0	51
05:15 AM	0	35	14	0	5	0	0	1	0	0	1	0	0	0	56
05:30 AM	0	38	12	1	2	1	0	1	0	0	2	0	0	0	57
05:45 AM	0	48	11	0	0	0	0	1	2	0	3	0	0	0	65
Day Total															
Percent															
ADT 2802															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	1	32	19	0	6	0	0	0	0	0	1	0	0	0	59
06:15 AM	0	22	11	0	1	0	0	0	0	0	1	0	0	0	35
06:30 AM	1	51	10	1	9	0	0	4	0	0	2	0	0	0	78
06:45 AM	0	40	15	1	2	0	0	1	1	0	0	0	0	0	60
07:00 AM	1	37	13	0	9	0	0	3	1	0	4	0	0	0	68
07:15 AM	1	48	11	0	3	0	0	0	0	0	2	0	0	0	65
07:30 AM	1	50	13	1	5	0	0	1	1	0	2	0	0	2	76
07:45 AM	1	37	15	1	5	1	0	1	0	0	5	0	0	0	66
08:00 AM	0	26	9	0	0	0	0	0	0	0	3	0	0	0	38
08:15 AM	1	29	3	1	2	0	0	0	0	0	1	0	0	0	37
08:30 AM	0	34	7	0	4	1	0	3	0	0	4	0	0	2	55
08:45 AM	0	35	7	1	2	0	1	1	0	0	1	0	0	0	48
09:00 AM	0	24	9	0	4	0	0	0	0	0	3	0	0	1	41
09:15 AM	0	19	6	2	1	2	0	3	1	0	2	0	0	0	36
09:30 AM	1	17	10	3	5	0	0	3	1	0	1	0	0	1	42
09:45 AM	0	20	4	2	1	0	0	2	1	0	0	0	0	0	30
10:00 AM	0	15	9	2	2	1	0	1	0	0	1	0	0	0	31
10:15 AM	1	18	4	2	1	0	0	1	0	0	1	0	0	0	28
10:30 AM	0	16	10	1	3	0	0	2	1	0	0	0	0	1	34
10:45 AM	0	22	3	1	2	0	0	1	0	0	0	0	0	0	29
11:00 AM	0	27	6	0	1	0	0	0	0	0	1	0	0	0	35
11:15 AM	0	16	1	0	3	0	0	1	0	0	1	1	0	0	23
11:30 AM	0	17	5	0	3	1	0	1	1	0	0	0	0	1	29
11:45 AM	0	19	7	0	3	1	1	3	1	0	0	0	0	1	36
Day Total															
Percent															
ADT 2802															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	19	10	1	2	0	0	**2**	0	0	**4**	0	0	0	38
12:15 PM	0	15	4	0	2	0	0	1	1	0	2	0	0	0	25
12:30 PM	0	14	3	0	3	0	0	0	0	0	0	0	0	0	20
12:45 PM	**6**	7	4	**3**	5	0	0	1	0	0	0	0	0	1	27
01:00 PM	2	19	4	0	2	0	0	2	**2**	0	0	0	0	1	32
01:15 PM	0	6	6	2	5	0	0	1	0	0	0	0	0	0	20
01:30 PM	0	14	7	0	**8**	**1**	0	0	0	0	0	0	0	1	31
01:45 PM	2	11	7	1	3	0	0	0	0	0	0	0	0	0	24
02:00 PM	0	13	3	0	4	0	0	1	0	0	0	0	0	0	21
02:15 PM	0	19	4	1	3	0	0	0	1	0	0	0	0	2	30
02:30 PM	0	22	5	0	7	0	0	1	1	0	0	0	0	0	36
02:45 PM	0	18	7	2	6	0	0	1	0	0	0	0	0	0	34
03:00 PM	0	16	5	1	2	0	0	0	0	0	0	0	0	0	24
03:15 PM	0	20	13	0	3	1	0	0	0	0	0	0	0	0	37
03:30 PM	0	25	8	3	4	0	0	0	0	0	0	0	0	2	42
03:45 PM	1	23	4	0	5	1	0	0	0	0	0	0	0	**3**	37
04:00 PM	0	32	7	0	2	0	0	0	0	0	0	0	0	0	41
04:15 PM	0	19	7	1	4	0	0	0	0	0	0	0	0	0	31
04:30 PM	0	10	12	0	5	0	0	0	0	0	0	0	0	0	27
04:45 PM	0	23	4	0	3	0	0	0	0	0	0	0	0	0	30
05:00 PM	1	19	7	0	4	0	0	0	0	0	0	0	0	0	31
05:15 PM	0	25	7	0	1	0	0	0	0	0	0	0	0	0	33
05:30 PM	0	21	5	0	4	0	0	0	0	0	0	0	0	0	30
05:45 PM	0	16	6	0	0	0	0	0	0	0	0	0	0	1	23
Day Total															
Percent															
ADT 2802															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

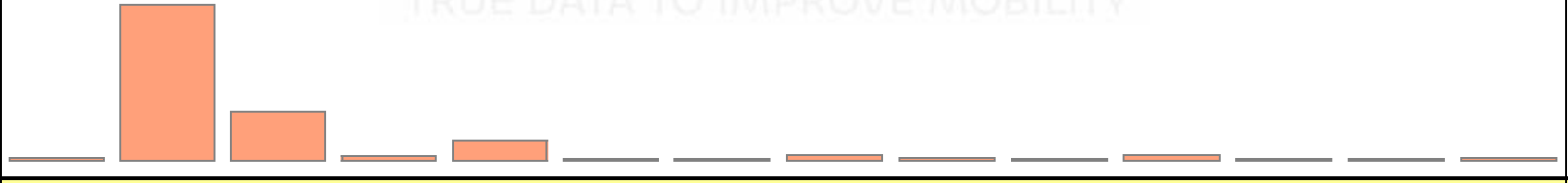
Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	22	7	0	6	0	0	2	0	0	0	0	0	1	38
06:15 PM	1	17	8	0	4	0	0	1	0	0	0	0	0	0	31
06:30 PM	0	**33**	4	0	4	0	0	2	0	0	0	0	0	0	43
06:45 PM	0	21	**16**	0	5	0	0	0	0	0	0	0	0	0	42
07:00 PM	0	19	7	0	5	1	0	0	0	0	0	0	0	0	32
07:15 PM	0	29	12	0	3	0	0	0	0	0	0	0	0	0	**44**
07:30 PM	0	32	9	0	0	0	0	1	1	0	0	0	0	0	43
07:45 PM	0	21	4	0	0	0	0	0	1	0	0	0	0	0	26
08:00 PM	0	19	5	0	2	0	0	2	0	0	0	0	0	0	28
08:15 PM	0	17	6	1	0	0	0	0	0	0	0	0	0	0	24
08:30 PM	0	11	6	0	0	0	0	0	0	0	0	0	0	0	17
08:45 PM	0	26	7	0	1	0	0	1	0	0	0	0	0	0	35
09:00 PM	0	21	5	0	1	0	0	1	0	0	0	0	0	1	29
09:15 PM	0	13	3	0	2	0	0	0	0	0	0	0	0	0	18
09:30 PM	0	17	5	0	0	0	0	0	1	0	0	0	0	0	23
09:45 PM	0	9	0	0	2	0	0	0	0	0	0	0	0	0	11
10:00 PM	4	7	4	0	1	0	0	0	0	0	0	0	0	0	16
10:15 PM	1	13	0	0	1	0	0	0	0	0	0	0	0	0	15
10:30 PM	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
10:45 PM	0	11	0	0	0	0	0	0	0	0	1	0	0	0	12
11:00 PM	0	4	1	0	1	0	0	1	0	0	0	0	0	0	7
11:15 PM	0	5	1	0	1	0	0	2	0	0	0	0	0	0	9
11:30 PM	1	0	6	0	1	0	0	0	0	0	0	0	0	1	9
11:45 PM	0	1	6	0	0	0	0	0	0	0	0	0	0	0	7
Day Total	28	1766	562	38	228	12	2	60	24	0	54	1	0	27	2802
Percent	1%	63%	20.1%	1.4%	8.1%	0.4%	0.1%	2.1%	0.9%	0%	1.9%	0%	0%	1%	
ADT 2802															
AM Peak	6:00 AM	6:30 AM	6:00 AM	9:30 AM	6:30 AM	9:15 AM	8:45 AM	6:30 AM	5:45 AM	12:00 AM	7:45 AM	11:15 AM	12:00 AM	12:00 AM	6:30 AM
15-min Vol	1	51	19	3	9	2	1	4	2	0	5	1	0	2	78
PM Peak	12:45 PM	6:30 PM	6:45 PM	12:45 PM	1:30 PM	1:30 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	3:45 PM	7:15 PM
15-min Vol	6	33	16	3	8	1	0	2	2	0	4	0	0	3	44

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
SPECIFIC LOCATION:
CITY/STATE: Rosamond, CA

QC JOB #: 16537434
DIRECTION: NB, SB
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	28	1766	562	38	228	12	2	60	24	0	54	1	0	27	2802
Percent	1%	63%	20.1%	1.4%	8.1%	0.4%	0.1%	2.1%	0.9%	0%	1.9%	0%	0%	1%	
ADT 2802															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd | **QC JOB #:** 16537434

SPECIFIC LOCATION: | **DIRECTION:** NB, SB

CITY/STATE: Rosamond, CA | **DATE:** Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		6				6			6	
12:15 AM		2				2			2	
12:30 AM		5				5			5	
12:45 AM		6				6			6	
01:00 AM		9				9			9	
01:15 AM		7				7			7	
01:30 AM		6				6			6	
01:45 AM		2				2			2	
02:00 AM		1				1			1	
02:15 AM		8				8			8	
02:30 AM		10				10			10	
02:45 AM		3				3			3	
03:00 AM		4				4			4	
03:15 AM		8				8			8	
03:30 AM		8				8			8	
03:45 AM		17				17			17	
04:00 AM		21				21			21	
04:15 AM		24				24			24	
04:30 AM		22				22			22	
04:45 AM		31				31			31	
05:00 AM		51				51			51	
05:15 AM		56				56			56	
05:30 AM		57				57			57	
05:45 AM		65				65			65	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		59				59			59	
06:15 AM		35				35			35	
06:30 AM		**78**				**78**			**78**	
06:45 AM		60				60			60	
07:00 AM		68				68			68	
07:15 AM		65				65			65	
07:30 AM		76				76			76	
07:45 AM		66				66			66	
08:00 AM		38				38			38	
08:15 AM		37				37			37	
08:30 AM		55				55			55	
08:45 AM		48				48			48	
09:00 AM		41				41			41	
09:15 AM		36				36			36	
09:30 AM		42				42			42	
09:45 AM		30				30			30	
10:00 AM		31				31			31	
10:15 AM		28				28			28	
10:30 AM		34				34			34	
10:45 AM		29				29			29	
11:00 AM		35				35			35	
11:15 AM		23				23			23	
11:30 AM		29				29			29	
11:45 AM		36				36			36	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		38				38			38	
12:15 PM		25				25			25	
12:30 PM		20				20			20	
12:45 PM		27				27			27	
01:00 PM		32				32			32	
01:15 PM		20				20			20	
01:30 PM		31				31			31	
01:45 PM		24				24			24	
02:00 PM		21				21			21	
02:15 PM		30				30			30	
02:30 PM		36				36			36	
02:45 PM		34				34			34	
03:00 PM		24				24			24	
03:15 PM		37				37			37	
03:30 PM		42				42			42	
03:45 PM		37				37			37	
04:00 PM		41				41			41	
04:15 PM		31				31			31	
04:30 PM		27				27			27	
04:45 PM		30				30			30	
05:00 PM		31				31			31	
05:15 PM		33				33			33	
05:30 PM		30				30			30	
05:45 PM		23				23			23	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		38				38			38	
06:15 PM		31				31			31	
06:30 PM		43				43			43	
06:45 PM		42				42			42	
07:00 PM		32				32			32	
07:15 PM		**44**				**44**			**44**	
07:30 PM		43				43			43	
07:45 PM		26				26			26	
08:00 PM		28				28			28	
08:15 PM		24				24			24	
08:30 PM		17				17			17	
08:45 PM		35				35			35	
09:00 PM		29				29			29	
09:15 PM		18				18			18	
09:30 PM		23				23			23	
09:45 PM		11				11			11	
10:00 PM		16				16			16	
10:15 PM		15				15			15	
10:30 PM		11				11			11	
10:45 PM		12				12			12	
11:00 PM		7				7			7	
11:15 PM		9				9			9	
11:30 PM		9				9			9	
11:45 PM		7				7			7	
Day Total		2802				2802			2802	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		6:30 AM 78				6:30 AM 78			6:30 AM 78	
PM Peak 15-min Vol		7:15 PM 44				7:15 PM 44			7:15 PM 44	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	66-75	2
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
12:30 AM	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	46-55	2
12:45 AM	0	0	0	0	0	0	**1**	0	0	0	1	0	0	0	2	36-45	1
01:00 AM	0	0	0	0	0	0	1	0	0	2	1	0	0	0	4	56-65	3
01:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	46-55	1
01:30 AM	0	0	0	0	1	0	0	0	0	1	0	1	0	0	3	26-35	1
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	61-70	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
02:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
02:30 AM	0	0	0	0	0	0	0	0	1	1	1	0	1	1	5	51-60	2
02:45 AM	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	51-60	2
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	66-75	2
03:15 AM	0	0	0	0	0	0	0	1	1	3	0	0	1	0	6	51-60	4
03:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3	56-65	2
03:45 AM	0	0	0	0	**2**	0	0	0	2	1	4	3	3	2	17	61-70	7
04:00 AM	0	0	0	0	0	0	0	0	0	6	6	0	2	2	16	56-65	12
04:15 AM	0	0	0	0	0	0	0	0	1	5	2	5	2	3	18	56-65	7
04:30 AM	0	0	0	0	0	0	0	0	1	5	4	4	2	0	16	56-65	9
04:45 AM	0	0	0	0	0	0	0	0	3	12	3	5	4	1	28	51-60	15
05:00 AM	0	0	0	0	0	0	0	0	4	12	13	6	1	2	38	56-65	25
05:15 AM	0	0	0	0	0	0	0	0	4	11	9	7	**6**	3	40	56-65	20
05:30 AM	0	0	0	0	0	0	0	0	1	3	11	**15**	1	1	32	61-70	26
05:45 AM	0	0	0	0	0	0	0	2	3	11	13	9	5	**5**	48	56-65	24
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

TRUE DATA TO IMPROVE MOBILITY

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	0	0	0	0	4	12	13	8	2	2	41	56-65	25
06:15 AM	0	0	0	0	0	0	0	0	1	4	12	2	3	2	24	56-65	16
06:30 AM	0	0	0	0	0	0	0	3	5	9	14	10	5	2	48	61-70	24
06:45 AM	0	0	0	0	0	0	0	0	3	12	11	5	1	4	36	56-65	23
07:00 AM	0	0	0	0	0	0	0	0	6	10	14	4	3	2	39	56-65	24
07:15 AM	0	0	0	0	0	0	0	1	8	9	**16**	9	3	3	**49**	61-70	25
07:30 AM	0	0	0	0	0	0	0	1	4	**15**	14	9	4	0	47	56-65	29
07:45 AM	0	0	0	0	0	0	0	0	6	8	6	10	5	2	37	61-70	16
08:00 AM	0	0	0	0	0	0	0	0	2	8	3	4	1	2	20	56-65	11
08:15 AM	0	0	0	0	0	0	0	0	5	3	5	2	3	0	18	54-63	8
08:30 AM	0	0	0	0	0	0	0	0	6	14	14	2	0	2	38	56-65	28
08:45 AM	0	0	0	0	0	0	0	2	4	14	10	2	2	0	34	56-65	24
09:00 AM	1	0	0	0	0	0	0	1	7	11	6	5	0	0	31	51-60	18
09:15 AM	0	0	0	0	0	0	0	**14**	7	5	1	1	0	1	29	46-55	21
09:30 AM	**3**	**1**	0	0	0	0	0	5	5	13	5	2	0	0	34	51-60	18
09:45 AM	1	0	0	0	0	0	0	2	5	9	2	3	0	1	23	51-60	14
10:00 AM	0	0	0	0	0	0	0	5	5	9	5	1	0	0	25	51-60	14
10:15 AM	1	0	0	0	0	0	1	0	2	8	7	2	1	0	22	56-65	15
10:30 AM	0	0	0	0	0	0	0	1	4	10	6	4	0	0	25	56-65	16
10:45 AM	1	0	0	0	0	0	0	0	3	8	9	3	1	0	25	56-65	17
11:00 AM	0	0	0	0	0	0	0	0	6	9	7	4	4	1	31	56-65	16
11:15 AM	0	0	0	0	0	**1**	0	0	4	8	4	1	0	1	19	56-65	12
11:30 AM	1	0	0	0	0	0	0	2	3	7	8	2	0	1	24	56-65	15
11:45 AM	0	0	0	0	0	0	0	1	**11**	13	1	2	1	1	30	51-60	24
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	0	0	0	0	0	0	0	1	10	8	3	4	4	0	30	51-60	18
12:15 PM	0	0	0	0	0	0	0	0	5	**9**	7	1	1	1	24	56-65	16
12:30 PM	0	0	0	0	0	0	0	0	1	3	9	3	1	2	19	56-65	12
12:45 PM	**6**	**1**	0	0	0	0	0	1	1	4	6	4	0	0	23	58-67	10
01:00 PM	2	0	0	0	0	0	0	1	3	5	8	5	3	1	28	59-68	13
01:15 PM	0	0	0	0	0	0	0	0	1	4	1	2	1	5	14	55-64	5
01:30 PM	1	0	0	0	0	0	0	0	3	5	5	6	5	4	29	62-71	11
01:45 PM	1	0	0	0	0	**1**	**1**	0	0	2	2	7	3	6	23	66-75	10
02:00 PM	0	0	0	0	0	0	0	0	0	1	4	5	5	4	19	66-75	10
02:15 PM	0	0	0	0	0	0	0	1	0	8	5	8	3	4	29	56-65	13
02:30 PM	0	0	0	0	0	0	0	0	0	6	**15**	8	5	1	35	61-70	23
02:45 PM	0	0	0	0	0	0	0	0	3	1	6	7	9	3	29	66-75	16
03:00 PM	0	0	0	0	0	0	0	0	3	7	6	1	2	2	21	56-65	13
03:15 PM	0	0	0	0	0	0	0	0	7	7	8	5	5	2	34	56-65	15
03:30 PM	1	0	0	0	**1**	0	0	0	2	3	10	6	**11**	2	36	66-75	17
03:45 PM	0	0	0	0	0	1	0	1	10	6	6	3	3	2	32	51-60	16
04:00 PM	0	0	0	0	0	0	0	**8**	**11**	4	6	6	2	4	**41**	46-55	19
04:15 PM	0	0	0	0	0	0	0	0	1	3	10	3	4	**8**	29	56-65	13
04:30 PM	0	0	0	0	0	0	0	1	3	4	3	**9**	1	3	24	61-70	12
04:45 PM	0	0	0	0	0	0	0	0	0	4	9	7	4	1	25	61-70	16
05:00 PM	0	1	0	0	0	1	0	0	2	2	7	9	1	2	25	61-70	16
05:15 PM	0	0	0	0	0	0	0	0	8	5	9	3	2	3	30	56-65	14
05:30 PM	0	0	0	0	0	0	0	0	2	5	1	6	4	2	20	66-75	10
05:45 PM	0	0	0	0	0	0	0	1	1	2	6	1	1	1	13	56-65	8
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

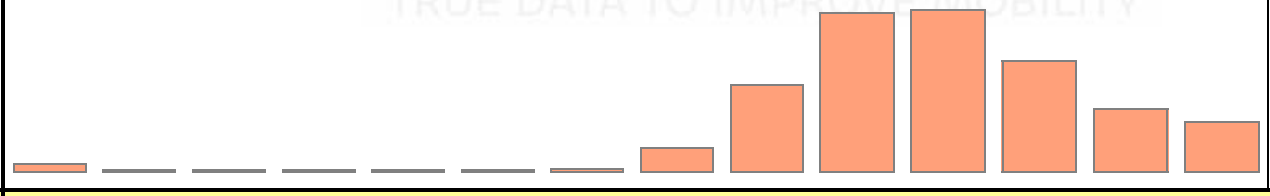
Type of report: Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	0	0	0	0	0	0	1	0	1	2	4	5	2	3	18	61-70	9
06:15 PM	0	0	0	0	0	0	0	0	1	0	5	3	1	3	13	61-70	8
06:30 PM	0	0	0	0	0	0	0	1	1	1	2	4	3	0	12	66-75	7
06:45 PM	0	0	0	0	0	0	0	0	0	4	2	4	2	3	15	56-65	6
07:00 PM	0	0	0	0	0	0	0	0	0	2	3	1	0	1	7	56-65	5
07:15 PM	0	0	0	0	0	0	0	0	6	4	0	3	2	4	19	51-60	10
07:30 PM	0	0	0	0	0	0	0	0	1	6	5	4	1	2	19	56-65	11
07:45 PM	0	0	0	0	0	0	1	0	1	2	1	6	0	0	11	61-70	7
08:00 PM	0	0	0	0	0	0	0	0	3	0	3	2	1	3	12	61-70	5
08:15 PM	0	0	0	0	0	0	0	0	3	2	1	2	1	2	11	51-60	5
08:30 PM	0	0	0	0	0	0	0	1	1	0	3	0	1	0	6	56-65	3
08:45 PM	0	0	0	0	0	0	0	2	1	4	3	0	2	2	14	56-65	7
09:00 PM	0	0	0	0	0	0	0	0	1	1	2	1	2	1	8	61-70	3
09:15 PM	0	0	0	0	0	0	0	1	0	1	0	1	1	1	5	66-75	2
09:30 PM	0	0	0	0	0	0	0	0	3	1	1	0	0	0	5	51-60	4
09:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	36-45	1
10:00 PM	0	0	0	0	0	0	0	0	3	2	3	1	1	0	10	51-60	5
10:15 PM	0	0	0	0	0	0	0	3	1	4	1	0	1	0	10	55-64	5
10:30 PM	0	0	0	0	0	0	0	2	1	2	0	0	0	0	5	46-55	3
10:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	1	5	71-80	2
11:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3	56-65	2
11:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	56-65	1
11:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	1	3	71-80	1
11:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
Day Total	19	3	0	0	4	4	7	68	246	453	458	312	174	140	1888	56-65	911
Percent	1%	0.2%	0%	0%	0.2%	0.2%	0.4%	3.6%	13%	24%	24.3%	16.5%	9.2%	7.4%			
AM Peak	9:30 AM	9:30 AM	12:00 AM	12:00 AM	3:45 AM	11:15 AM	12:45 AM	9:15 AM	11:45 AM	7:30 AM	7:15 AM	5:30 AM	5:15 AM	5:45 AM	7:15 AM		
15-min Vol	3	1	0	0	2	1	1	14	11	15	16	15	6	5	49		
PM Peak	12:45 PM	12:45 PM	12:00 PM	12:00 PM	3:30 PM	1:45 PM	1:45 PM	4:00 PM	4:00 PM	12:15 PM	2:30 PM	4:30 PM	3:30 PM	4:15 PM	4:00 PM		
15-min Vol	6	1	0	0	1	1	1	8	11	9	15	9	11	8	41		



Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	19	3	0	0	4	4	7	68	246	453	458	312	174	140	1888	56-65	911
Percent	1%	0.2%	0%	0%	0.2%	0.2%	0.4%	3.6%	13%	24%	24.3%	16.5%	9.2%	7.4%			
Cumulative Percent	1%	1.2%	1.2%	1.2%	1.4%	1.6%	2%	5.6%	18.6%	42.6%	66.8%	83.4%	92.6%	100%			

ADT
1888



85th Percentile: 70 MPH
Mean Speed(Average): 61 MPH
Median: 61 MPH
Mode: 63 MPH

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	2	3
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
12:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
01:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4
01:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:30 AM	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3
01:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:30 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
02:45 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
03:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:15 AM	0	5	0	0	0	0	0	0	0	0	1	0	0	0	6
03:30 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
03:45 AM	0	10	5	1	0	0	0	0	1	0	0	0	0	0	17
04:00 AM	0	13	1	0	1	0	0	0	1	0	0	0	0	0	16
04:15 AM	0	13	3	0	2	0	0	0	0	0	0	0	0	0	18
04:30 AM	0	10	2	0	3	0	0	0	0	0	1	0	0	0	16
04:45 AM	0	21	4	0	1	0	0	0	0	0	2	0	0	0	28
05:00 AM	0	27	6	0	4	0	0	0	1	0	0	0	0	0	38
05:15 AM	0	24	12	0	3	0	0	0	0	0	1	0	0	0	40
05:30 AM	0	21	9	0	1	1	0	0	0	0	0	0	0	0	32
05:45 AM	0	35	9	0	0	0	0	1	2	0	1	0	0	0	48
Day Total															
Percent															
ADT 1888															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 AM	0	23	12	0	**5**	0	0	0	0	0	1	0	0	0	41
06:15 AM	0	16	8	0	0	0	0	0	0	0	0	0	0	0	24
06:30 AM	**1**	31	7	0	5	0	0	2	0	0	2	0	0	0	48
06:45 AM	0	27	6	1	1	0	0	0	1	0	0	0	0	0	36
07:00 AM	1	26	6	0	4	0	0	0	0	0	2	0	0	0	39
07:15 AM	1	**37**	7	0	2	0	0	0	0	0	2	0	0	0	**49**
07:30 AM	0	33	7	0	2	0	0	0	1	0	2	0	0	2	47
07:45 AM	0	24	10	0	2	1	0	0	0	0	0	0	0	0	37
08:00 AM	0	14	3	0	0	0	0	0	0	0	**3**	0	0	0	20
08:15 AM	1	14	2	0	0	0	0	0	0	0	1	0	0	0	18
08:30 AM	0	27	6	0	1	1	0	0	0	0	3	0	0	0	38
08:45 AM	0	27	5	0	0	0	**1**	1	0	0	0	0	0	0	34
09:00 AM	0	18	8	0	2	0	0	0	0	0	2	0	0	1	31
09:15 AM	0	17	3	1	1	**2**	0	2	1	0	2	0	0	0	29
09:30 AM	1	14	7	**3**	4	0	0	**3**	1	0	0	0	0	1	34
09:45 AM	0	14	3	2	1	0	0	2	1	0	0	0	0	0	23
10:00 AM	0	13	7	1	2	0	0	1	0	0	1	0	0	0	25
10:15 AM	1	15	3	0	1	0	0	1	0	0	1	0	0	0	22
10:30 AM	0	14	5	0	2	0	0	2	1	0	0	0	0	1	25
10:45 AM	0	21	2	1	1	0	0	0	0	0	0	0	0	0	25
11:00 AM	0	25	4	0	1	0	0	0	0	0	1	0	0	0	31
11:15 AM	0	14	1	0	1	0	0	1	0	0	1	**1**	0	0	19
11:30 AM	0	13	5	0	3	0	0	1	1	0	0	0	0	1	24
11:45 AM	0	15	7	0	2	1	1	3	1	0	0	0	0	0	30
Day Total															
Percent															
ADT 1888															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
12:00 PM	0	15	7	0	2	0	0	**2**	0	0	**4**	0	0	0	30
12:15 PM	0	15	4	0	1	0	0	1	**1**	0	2	0	0	0	24
12:30 PM	0	14	3	0	2	0	0	0	0	0	0	0	0	0	19
12:45 PM	**6**	7	4	1	3	0	0	1	0	0	0	0	0	1	23
01:00 PM	2	17	4	0	2	0	0	1	1	0	0	0	0	1	28
01:15 PM	0	6	4	0	3	0	0	1	0	0	0	0	0	0	14
01:30 PM	0	14	6	0	**7**	**1**	0	0	0	0	0	0	0	1	29
01:45 PM	2	11	7	1	2	0	0	0	0	0	0	0	0	0	23
02:00 PM	0	13	3	0	2	0	0	1	0	0	0	0	0	0	19
02:15 PM	0	19	4	0	3	0	0	0	1	0	0	0	0	2	29
02:30 PM	0	22	5	0	6	0	0	1	1	0	0	0	0	0	35
02:45 PM	0	17	6	1	4	0	0	1	0	0	0	0	0	0	29
03:00 PM	0	14	4	1	2	0	0	0	0	0	0	0	0	0	21
03:15 PM	0	18	**12**	0	3	1	0	0	0	0	0	0	0	0	34
03:30 PM	0	22	8	**2**	3	0	0	0	0	0	0	0	0	1	36
03:45 PM	1	20	4	0	3	1	0	0	0	0	0	0	0	**3**	32
04:00 PM	0	**32**	7	0	2	0	0	0	0	0	0	0	0	0	**41**
04:15 PM	0	17	7	1	4	0	0	0	0	0	0	0	0	0	29
04:30 PM	0	9	11	0	4	0	0	0	0	0	0	0	0	0	24
04:45 PM	0	20	4	0	1	0	0	0	0	0	0	0	0	0	25
05:00 PM	1	15	7	0	2	0	0	0	0	0	0	0	0	0	25
05:15 PM	0	23	6	0	1	0	0	0	0	0	0	0	0	0	30
05:30 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	0	20
05:45 PM	0	12	1	0	0	0	0	0	0	0	0	0	0	0	13
Day Total															
Percent															
ADT 1888															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
06:00 PM	0	11	3	0	3	0	0	1	0	0	0	0	0	0	18
06:15 PM	0	7	2	0	4	0	0	0	0	0	0	0	0	0	13
06:30 PM	0	10	0	0	1	0	0	1	0	0	0	0	0	0	12
06:45 PM	0	7	7	0	1	0	0	0	0	0	0	0	0	0	15
07:00 PM	0	2	2	0	3	0	0	0	0	0	0	0	0	0	7
07:15 PM	0	11	6	0	2	0	0	0	0	0	0	0	0	0	19
07:30 PM	0	16	2	0	0	0	0	1	0	0	0	0	0	0	19
07:45 PM	0	7	3	0	0	0	0	0	1	0	0	0	0	0	11
08:00 PM	0	9	1	0	2	0	0	0	0	0	0	0	0	0	12
08:15 PM	0	8	2	1	0	0	0	0	0	0	0	0	0	0	11
08:30 PM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
08:45 PM	0	11	2	0	0	0	0	1	0	0	0	0	0	0	14
09:00 PM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
09:15 PM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
09:30 PM	0	3	1	0	0	0	0	0	1	0	0	0	0	0	5
09:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	3	3	4	0	0	0	0	0	0	0	0	0	0	0	10
10:15 PM	1	8	0	0	1	0	0	0	0	0	0	0	0	0	10
10:30 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
10:45 PM	0	4	0	0	0	0	0	0	0	0	1	0	0	0	5
11:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
11:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 PM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3
11:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	23	1220	367	19	138	9	2	34	20	0	37	1	0	18	1888
Percent	1.2%	64.6%	19.4%	1%	7.3%	0.5%	0.1%	1.8%	1.1%	0%	2%	0.1%	0%	1%	
ADT 1888															
AM Peak	6:30 AM	7:15 AM	5:15 AM	9:30 AM	6:00 AM	9:15 AM	8:45 AM	9:30 AM	5:45 AM	12:00 AM	8:00 AM	11:15 AM	12:00 AM	12:00 AM	7:15 AM
15-min Vol	1	37	12	3	5	2	1	3	2	0	3	1	0	2	49
PM Peak	12:45 PM	4:00 PM	3:15 PM	3:30 PM	1:30 PM	1:30 PM	12:00 PM	12:00 PM	12:15 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	3:45 PM	4:00 PM
15-min Vol	6	32	12	2	7	1	0	2	1	0	4	0	0	3	41

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024

Start Time	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Unclassed	Total
Grand Total	23	1220	367	19	138	9	2	34	20	0	37	1	0	18	1888
Percent	1.2%	64.6%	19.4%	1%	7.3%	0.5%	0.1%	1.8%	1.1%	0%	2%	0.1%	0%	1%	
ADT 1888															

Comments:

Report generated on 6/17/2024 4:35 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		3				3			3	
12:15 AM		0				0			0	
12:30 AM		3				3			3	
12:45 AM		2				2			2	
01:00 AM		4				4			4	
01:15 AM		2				2			2	
01:30 AM		3				3			3	
01:45 AM		1				1			1	
02:00 AM		1				1			1	
02:15 AM		1				1			1	
02:30 AM		5				5			5	
02:45 AM		3				3			3	
03:00 AM		2				2			2	
03:15 AM		6				6			6	
03:30 AM		3				3			3	
03:45 AM		17				17			17	
04:00 AM		16				16			16	
04:15 AM		18				18			18	
04:30 AM		16				16			16	
04:45 AM		28				28			28	
05:00 AM		38				38			38	
05:15 AM		40				40			40	
05:30 AM		32				32			32	
05:45 AM		48				48			48	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		41				41			41	
06:15 AM		24				24			24	
06:30 AM		48				48			48	
06:45 AM		36				36			36	
07:00 AM		39				39			39	
07:15 AM		**49**				**49**			**49**	
07:30 AM		47				47			47	
07:45 AM		37				37			37	
08:00 AM		20				20			20	
08:15 AM		18				18			18	
08:30 AM		38				38			38	
08:45 AM		34				34			34	
09:00 AM		31				31			31	
09:15 AM		29				29			29	
09:30 AM		34				34			34	
09:45 AM		23				23			23	
10:00 AM		25				25			25	
10:15 AM		22				22			22	
10:30 AM		25				25			25	
10:45 AM		25				25			25	
11:00 AM		31				31			31	
11:15 AM		19				19			19	
11:30 AM		24				24			24	
11:45 AM		30				30			30	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd **QC JOB #:** 16537434

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Rosamond, CA **DATE:** Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		30				30			30	
12:15 PM		24				24			24	
12:30 PM		19				19			19	
12:45 PM		23				23			23	
01:00 PM		28				28			28	
01:15 PM		14				14			14	
01:30 PM		29				29			29	
01:45 PM		23				23			23	
02:00 PM		19				19			19	
02:15 PM		29				29			29	
02:30 PM		35				35			35	
02:45 PM		29				29			29	
03:00 PM		21				21			21	
03:15 PM		34				34			34	
03:30 PM		36				36			36	
03:45 PM		32				32			32	
04:00 PM		**41**				**41**			**41**	
04:15 PM		29				29			29	
04:30 PM		24				24			24	
04:45 PM		25				25			25	
05:00 PM		25				25			25	
05:15 PM		30				30			30	
05:30 PM		20				20			20	
05:45 PM		13				13			13	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

Type of report: Tube Count - Volume Data

LOCATION: Tehachapi Willow Springs Rd N of Aqueduct Rd
QC JOB #: 16537434
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Rosamond, CA
DATE: Jun 4 2024 - Jun 4 2024

Start Time	Mon	Tue 4 Jun 24	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		18				18			18	
06:15 PM		13				13			13	
06:30 PM		12				12			12	
06:45 PM		15				15			15	
07:00 PM		7				7			7	
07:15 PM		19				19			19	
07:30 PM		19				19			19	
07:45 PM		11				11			11	
08:00 PM		12				12			12	
08:15 PM		11				11			11	
08:30 PM		6				6			6	
08:45 PM		14				14			14	
09:00 PM		8				8			8	
09:15 PM		5				5			5	
09:30 PM		5				5			5	
09:45 PM		2				2			2	
10:00 PM		10				10			10	
10:15 PM		10				10			10	
10:30 PM		5				5			5	
10:45 PM		5				5			5	
11:00 PM		3				3			3	
11:15 PM		1				1			1	
11:30 PM		3				3			3	
11:45 PM		1				1			1	
Day Total		1888				1888			1888	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak 15-min Vol		7:15 AM 49				7:15 AM 49			7:15 AM 49	
PM Peak 15-min Vol		4:00 PM 41				4:00 PM 41			4:00 PM 41	

Comments:

Report generated on 6/17/2024 4:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

TRUE DATA TO IMPROVE MOBILITY

APPENDIX B: PROJECT TRIP GENERATION SUMMARY

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Discovery Solar Storage Project Peak Construction Trip Generation Summary						
			Morning Peak Hour		Afternoon Peak Hour	
	Solar Acreage	Percent of Total	Entering	Exiting	Entering	Exiting
Site A	*721*	***11%***	63	6	6	63
Site B	*336*	***5%***	29	3	3	29
Site C	*996*	***15%***	87	8	8	87
Sites A+B+C	2054	**31%**	180	17	17	180
Site D (North)	2451	**37%**	215	19	19	215
Site D (South)	71	**1%**	6	1	1	6
Site E	2100	**31%**	184	17	17	184
Total	6676	**100%**	585	54	54	585

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APPENDIX C: PROJECT TRIP DISTRIBUTION CALCULATIONS

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Discovery Solar Storage Project
Population Gravity Model
(Uses Total Population data by Census Tract; No impact from Travel times 1:00 or greater)

							REGIONAL TRAVEL ROUTES								
							To/From North		To/From South		To/From East		Local Roadways		
Geography	Geographic Area Name	Total Population	Estimated Drive Time to Site	% Population in Drive Time Zone	Effective Total Population in Drive Time Zone	% of Total Population	CA-58 (via Tehachapi Pass)	CA-14	C-14 (to Backus Road)	90th Street W to Tehachapi Willow Springs Road	Ca-58 (East of Exit 172)	Roasamond Blvd to Tehachapi Willow Springs Road from South	In Mojave	100% CHECK	Total
14000000US06029005514	Census Tract 55.14; Kern County; California	3632	15 Mins or less	100.0%	3632	0.705%				100%				100%	0.7%
14000000US06029006012	Census Tract 60.12; Kern County; California	3182	15 Mins or less	100.0%	3182	0.617%	100%							100%	0.6%
14000000US06029005513	Census Tract 55.13; Kern County; California	1945	20 mins	95.4%	1856	0.360%						100%		100%	0.4%
14000000US06029005803	Census Tract 58.03; Kern County; California	3600	20 mins	95.4%	3435	0.667%			50%			50%		100%	0.7%
14000000US06029005804	Census Tract 58.04; Kern County; California	5523	20 mins	95.4%	5270	1.023%			50%			50%		100%	1.0%
14000000US06029005805	Census Tract 58.05; Kern County; California	2176	20 mins	95.4%	2076	0.403%						100%		100%	0.4%
14000000US06029005806	Census Tract 58.06; Kern County; California	5115	20 mins	95.4%	4881	0.947%						100%		100%	0.9%
14000000US06029005900	Census Tract 59; Kern County; California (MOJAVE)	3570	20 mins	95.4%	3407	0.661%							100%	100%	0.7%
14000000US06029006101	Census Tract 61.01; Kern County; California	3928	20 mins	95.4%	3748	0.727%	100%							100%	0.7%
14000000US06029006102	Census Tract 61.02; Kern County; California	4949	20 mins	95.4%	4723	0.916%	100%							100%	0.9%
14000000US06037900807	Census Tract 9008.07; Los Angeles County; California	3859	25 mins	90.3%	3485	0.676%			100%					100%	0.7%
14000000US06037900808	Census Tract 9008.08; Los Angeles County; California	5369	25 mins	90.3%	4849	0.941%			100%					100%	0.9%
14000000US06037900901	Census Tract 9009.01; Los Angeles County; California	3033	25 mins	90.3%	2739	0.532%				100%				100%	0.5%
14000000US06037901003	Census Tract 9010.03; Los Angeles County; California	3658	25 mins	90.3%	3304	0.641%				100%				100%	0.6%
14000000US06029006003	Census Tract 60.03; Kern County; California	5908	25 mins	90.3%	5335	1.035%	100%							100%	1.0%
14000000US06029006006	Census Tract 60.06; Kern County; California	4054	25 mins	90.3%	3661	0.710%	100%							100%	0.7%
14000000US06029006010	Census Tract 60.10; Kern County; California	3130	25 mins	90.3%	2827	0.549%	100%							100%	0.5%
14000000US06029005508	Census Tract 55.08; Kern County; California	4865	30 mins	84.5%	4111	0.798%		100%						100%	0.8%
14000000US06029006500	Census Tract 65; Kern County; California	4352	30 mins	84.5%	3678	0.714%		100%						100%	0.7%
14000000US06029005511	Census Tract 55.11; Kern County; California	4393	30 mins	84.5%	3713	0.720%		100%						100%	0.7%
14000000US06029005512	Census Tract 55.12; Kern County; California	3646	30 mins	84.5%	3081	0.598%		100%						100%	0.6%
14000000US06037900804	Census Tract 9008.04; Los Angeles County; California	3877	30 mins	84.5%	3276	0.636%			100%					100%	0.6%
14000000US06037900805	Census Tract 9008.05; Los Angeles County; California	5629	30 mins	84.5%	4757	0.923%			40%	60%				100%	0.9%
14000000US06037900902	Census Tract 9009.02; Los Angeles County; California	1397	30 mins	84.5%	1181	0.229%			25%	75%				100%	0.2%
14000000US06037901009	Census Tract 9010.09; Los Angeles County; California	5550	30 mins	84.5%	4690	0.910%			100%					100%	0.9%
14000000US06037900501	Census Tract 9005.01; Los Angeles County; California	7939	30 mins	84.5%	6709	1.302%			40%	60%				100%	1.3%
14000000US06037900504	Census Tract 9005.04; Los Angeles County; California	7051	30 mins	84.5%	5959	1.156%			50%	50%				100%	1.2%
14000000US06037900602	Census Tract 9006.02; Los Angeles County; California	5463	30 mins	84.5%	4617	0.896%			40%	60%				100%	0.9%
14000000US06037900606	Census Tract 9006.06; Los Angeles County; California	4580	30 mins	84.5%	3871	0.751%			40%	60%				100%	0.8%
14000000US06037900607	Census Tract 9006.07; Los Angeles County; California	3998	30 mins	84.5%	3379	0.656%			40%	60%				100%	0.7%
14000000US06037900609	Census Tract 9006.09; Los Angeles County; California	5186	30 mins	84.5%	4383	0.851%			40%	60%				100%	0.9%
14000000US06037900701	Census Tract 9007.01; Los Angeles County; California	4436	30 mins	84.5%	3749	0.728%			40%	60%				100%	0.7%
14000000US06037900703	Census Tract 9007.03; Los Angeles County; California	5363	30 mins	84.5%	4532	0.880%			40%	60%				100%	0.9%
14000000US06037900704	Census Tract 9007.04; Los Angeles County; California	3343	30 mins	84.5%	2825	0.548%			100%					100%	0.5%
14000000US06037900705	Census Tract 9007.05; Los Angeles County; California	4145	30 mins	84.5%	3503	0.680%			100%					100%	0.7%
14000000US06037900806	Census Tract 9008.06; Los Angeles County; California	4274	30 mins	84.5%	3612	0.701%			40%	60%				100%	0.7%
14000000US06037901007	Census Tract 9010.07; Los Angeles County; California	2254	30 mins	84.5%	1905	0.370%			100%					100%	0.4%
14000000US06037901008	Census Tract 9010.08; Los Angeles County; California	3365	30 mins	84.5%	2844	0.552%			100%					100%	0.6%
14000000US06037901010	Census Tract 9010.10; Los Angeles County; California	5521	30 mins	84.5%	4666	0.905%			40%	60%				100%	0.9%
14000000US06037901011	Census Tract 9010.11; Los Angeles County; California	5363	30 mins	84.5%	4532	0.880%			40%	60%				100%	0.9%
14000000US06037901012	Census Tract 9010.12; Los Angeles County; California	6806	30 mins	84.5%	5752	1.116%				100%				100%	1.1%
14000000US06037910212	Census Tract 9102.12; Los Angeles County; California	3143	35 mins	77.8%	2446	0.475%			100%					100%	0.5%
14000000US06029006002	Census Tract 60.02; Kern County; California	3611	30 mins	84.5%	3052	0.592%	100%							100%	0.6%
14000000US06037900505	Census Tract 9005.05; Los Angeles County; California	4587	30 mins	84.5%	3876	0.752%			100%					100%	0.8%
14000000US06037900506	Census Tract 9005.06; Los Angeles County; California	5095	30 mins	84.5%	4306	0.836%			100%					100%	0.8%
14000000US06037900608	Census Tract 9006.08; Los Angeles County; California	4229	30 mins	84.5%	3574	0.694%			100%					100%	0.7%
14000000US06037901214	Census Tract 9012.14; Los Angeles County; California	4926	30 mins	84.5%	4163	0.808%				100%				100%	0.8%
14000000US06037910215	Census Tract 9102.15; Los Angeles County; California	6659	40 mins	69.9%	4654	0.903%			40%	60%				100%	0.9%
14000000US06037901209	Census Tract 9012.09; Los Angeles County; California	989	30 mins	84.5%	836	0.162%				100%				100%	0.2%
14000000US06029006004	Census Tract 60.04; Kern County; California	1270	30 mins	84.5%	1073	0.208%	100%							100%	0.2%
14000000US06037901013	Census Tract 9010.13; Los Angeles County; California	3613	35 mins	77.8%	2811	0.546%			40%	60%				100%	0.5%
14000000US06037901014	Census Tract 9010.14; Los Angeles County; California	5272	35 mins	77.8%	4102	0.796%			40%	60%				100%	0.8%
14000000US06029005700	Census Tract 57; Kern County; California	2851	35 mins	77.8%	2219	0.431%			50%			50%		100%	0.4%
14000000US06037900301	Census Tract 9003.01; Los Angeles County; California	4439	35 mins	77.8%	3454	0.670%			40%	60%				100%	0.7%
14000000US06037900509	Census Tract 9005.09; Los Angeles County; California	4480	35 mins	77.8%	3486	0.677%			40%	60%				100%	0.7%
14000000US06037900510	Census Tract 9005.10; Los Angeles County; California	3960	35 mins	77.8%	3081	0.598%			40%	60%				100%	0.6%
14000000US06037900610	Census Tract 9006.10; Los Angeles County; California	3207	35 mins	77.8%	2496	0.484%			40%	60%				100%	0.5%
14000000US06037900611	Census Tract 9006.11; Los Angeles County; California	4808	35 mins	77.8%	3741	0.726%			40%	60%				100%	0.7%
14000000US06037901101	Census Tract 9011.01; Los Angeles County; California	5375	35 mins	77.8%	4183	0.812%				100%				100%	0.8%
14000000US06037901102	Census Tract 9011.02; Los Angeles County; California	5244	35 mins	77.8%	4081	0.792%				100%				100%	0.8%
14000000US06037901215	Census Tract 9012.15; Los Angeles County; California	3638	35 mins	77.8%	2831	0.549%				100%				100%	0.5%
14000000US06037901216	Census Tract 9012.16; Los Angeles County; California	2473	35 mins	77.8%	1924	0.373%				100%				100%	0.4%
14000000US06037901218	Census Tract 9012.18; Los Angeles County; California	2424	35 mins	77.8%	1886	0.366%				100%				100%	0.4%
14000000US06037910210	Census Tract 9102.10; Los Angeles County; California	7665	35 mins	77.8%	5965	1.157%			40%	60%				100%	1.2%
14000000US06037910211	Census Tract 9102.11; Los Angeles County; California	1677	35 mins	77.8%	1305	0.253%				100%				100%	0.3%
14000000US06037910213	Census Tract 9102.13; Los Angeles County; California	1530	35 mins	77.8%	1191	0.231%			40%	60%				100%	0.2%
14000000US06037910214	Census Tract 9102.14; Los Angeles County; California	5499	35 mins	77.8%	4279	0.830%			75%	25%				100%	0.8%
14000000US06037910216	Census Tract 9102.16; Los Angeles County; California	5257	35 mins	77.8%	4091	0.794%			40%	60%				100%	0.8%
14000000US06037910218	Census Tract 9102.18; Los Angeles County; California	4591	35 mins	77.8%	3572	0.693%				100%				100%	0.7%
14000000US06037910301	Census Tract 9103.01; Los Angeles County; California	4332	35 mins	77.8%	3371	0.654%				100%				100%	0.7%
14000000US06037900508	Census Tract 9005.08; Los Angeles County; California	3831	35 mins	77.8%	2981	0.579%			40%	60%				100%	0.6%
14000000US06037901210	Census Tract 9012.10; Los Angeles County; California	1714	35 mins	77.8%	1334	0.259%				100%				100%	0.3%
14000000US06037901300	Census Tract 9013; Los Angeles County; California	2206	35 mins	77.8%	1717	0.333%			40%	60%				100%	0.3%
14000000US06029006009	Census Tract 60.09; Kern County; California	2813	35 mins	77.8%	2189	0.425%	100%							100%	0.4%
14000000US06037910302	Census Tract 9103.02; Los Angeles County; California	6138	40 mins	69.9%	4290	0.833%				100%				100%	0.8%
14000000US06037910404	Census Tract 9104.04; Los Angeles County; California	4863	40 mins	69.9%	3399	0.660%			40%	60%				100%	0.7%
14000000US06037910405	Census Tract 9104.05; Los Angeles County; California	5882	40 mins	69.9%	4111	0.798%			40%	60%				100%	0.8%
14000000US06037910501	Census Tract 9105.01; Los Angeles County; California	5460	40 mins	69.9%	3816	0.741%			40%	60%				100%	0.7%
14000000US06037910502	Census Tract 9105.02; Los Angeles County; California	4875	40 mins	69.9%	3407	0.661%			40%	60%				100%	0.7%
14000000US06037910504	Census Tract 9105.04; Los Angeles County; California	4363	40 mins	69.9%	3050	0.592%			40%	60%				100%	0.6%
14000000US06037910601	Census Tract 9106.01; Los Angeles County; California	6449	40 mins	69.9%	4508	0.875%			40%	60%				100%	0.9%
14000000US06037910712	Census Tract 9107.12; Los Angeles County; California	3322	40 mins	69.9%	2322	0.451%			40%	60%				100%	0.5%
14000000US06037910713	Census Tract 9107.13; Los Angeles County; California	7172	40 mins	69.9%	5013	0.973%			40%	60%				100%	1.0%
14000000US06037910714	Census Tract 9107.14; Los Angeles County; California	4116	40 mins	69.9%	2877	0.558%			40%	60%				100%	0.6%
14000000US06037910715	Census Tract 9107.15; Los Angeles County; California	6538	40 mins	69.9%	4570	0.887%			40%	60%				100%	0.9%
14000000US06037910716	Census Tract 9107.16; Los Angeles County; California	6488	40 mins	69.9%	4535	0.880%			40%	60%				100%	0.9%
14000000US06037910719	Census Tract 9107.19; Los Angeles County; California	4658	40 mins	69.9%	3256	0.632%			40%	60%				100%	0.6%
14000000US06037910720	Census Tract 9107.20; Los Angeles County; California	5366	40 mins	69.9%	3751	0.728%			40%	60%				100%	0.7%
14000000US06037910721	Census Tract 9107.21; Los Angeles County; California	3708	40 mins	69.9%	2592	0.503%			40%	60%				100%	0.5%
14000000US06037901217	Census Tract 9012.17; Los Angeles County; California	1533	40 mins	69.9%	1072	0.208%				100%				100%	0.2%
14000000US06037920050	Census Tract 9200.50; Los Angeles County; California	1040	40 mins	69.9%	727	0.141%				100%				100%	0.1%
14000000US06029005600	Census Tract 56; Kern County; California	2469	45 mins	60.2%	1486	0.288%					100%			100%	0.3%
14000000US06037910401	Census Tract 9104.01; Los Angeles County; California	6096	45 mins	60.2%	3670	0.712%			40%	60%				100%	0.7%
14000000US06037910505	Census Tract 9105.05; Los Angeles County; California	3251	45 mins	60.2%	1957	0.380%			40%	60%				100%	0.4%
14000000US06037910602	Census Tract 9106.02; Los Angeles County; California	4867	45 mins	60.2%	2930	0.569%			40%	60%				100%	0.6%
14000000US06037910606	Census Tract 9106.06; Los Angeles County; California	3209	45 mins	60.2%	1932	0.375%			40%	60%				100%	0.4%
14000000US06037910607	Census Tract 9106.07; Los Angeles County; California	4233	45 mins	60.2%	2549	0.495%			40%	60%				100%	0.5%
14000000US06037910608	Census Tract 9106.08; Los Angeles County; California	3636	45 mins	60.2%	2189	0.425%			40%	60%				100%	0.4%
14000000US06037910707	Census Tract 9107.07; Los Angeles County; California	5101	45 mins	60.2%	3071	0.596%			40%	60%				100%	0.6%
14000000US06037910217	Census Tract 9102.17; Los Angeles County; California	5356	45 mins	60.2%	3225	0.626%				100%				100%	0.6%
14000000US06037910605	Census Tract 9106.05; Los Angeles County; California	5376	45 mins	60.2%	3237	0.628%			40%	60%				100%	0.6%
14000000US06037910718	Census Tract 9107.18; Los Angeles County; California	5308	45 mins	60.2%	3196	0.620%			40%	60%				100%	0.6%
14000000US06037910002	Census Tract 9100.02; Los Angeles County; California	7240	45 mins	60.2%	4359	0.846%			40%	60%				100%	0.8%
14000000US06037910706	Census Tract 9107.06; Los Angeles County; California	6888	45 mins	60.2%	4147	0.805%			40%	60%				100%	0.8%
14000000US06037910717	Census Tract 9107.17; Los Angeles County; California	2308	45 mins	60.2%	1390	0.270%			40%	60%				100%	0.3%
14000000US06029001001	Census Tract 10.01; Kern County; California	4876	45 mins	60.2%	2936	0.570%	100%							100%	0.6%
14000000US06029001101	Census Tract 11.01; Kern County; California	6718	45 mins	60.2%	4045	0.785%	100%							100%	0.8%
14000000US06029006301	Census Tract 63.01; Kern County; California	3644	45 mins	60.2%	2194	0.426%	100%							100%	0.4%
14000000US06029006303	Census Tract 63.03; Kern County; California	5184	45 mins	60.2%	3121	0.606%	100%							100%	0.6%
14000000US06029006304	Census Tract 63.04; Kern County; California	4037	45 mins	60.2%	2431	0.472%	100%							100%	0.5%
14000000US06029002403	Census Tract 24.03; Kern County; California	2396	45 mins	60.2%	1443	0.280%	100%							100%	0.3%
14000000US06071011602	Census Tract 116.02; San Bernardino County; California	1826	50 mins	47.7%	871	0.169%					100%			100%	0.2%
14000000US06037910804	Census Tract 9108.04; Los Angeles County; California	2900	50 mins	47.7%	1384	0.269%			40%	60%				100%	0.3%
14000000US06037910814	Census Tract 9108.14; Los Angeles County; California	3434	50 mins	47.7%	1638	0.318%			40%	60%				100%	0.3%

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Discovery Solar Storage Project
Population Gravity Model
(Uses Total Population data by Census Tract; No impact from Travel times 1:00 or greater)

							REGIONAL TRAVEL ROUTES								
							To/From North		To/From South		To/From East		Local Roadways		
Geography	Geographic Area Name	Total Population	Estimated Drive Time to Site	% Population in Drive Time Zone	Effective Total Population in Drive Time Zone	% of Total Population	CA-58 (via Tehachapi Pass)	CA-14	C-14 (to Backus Road)	90th Street W to Tehachapi Willow Springs Road	Ca-58 (East of Exit 172)	Roasamond Blvd to Tehachapi Willow Springs Road from South	In Mojave	100% CHECK	Total
14000000US06037911100	Census Tract 9111; Los Angeles County; California	7316	50 mins	47.7%	3491	0.677%			40%	60%				100%	0.7%
14000000US06029001002	Census Tract 10.02; Kern County; California	3418	50 mins	47.7%	1631	0.316%	100%							100%	0.3%
14000000US06029001003	Census Tract 10.03; Kern County; California	3338	50 mins	47.7%	1593	0.309%	100%							100%	0.3%
14000000US06029001104	Census Tract 11.04; Kern County; California	2562	50 mins	47.7%	1222	0.237%	100%							100%	0.2%
14000000US06029002303	Census Tract 23.03; Kern County; California	3610	50 mins	47.7%	1722	0.334%	100%							100%	0.3%
14000000US06029002401	Census Tract 24.01; Kern County; California	1692	50 mins	47.7%	807	0.157%	100%							100%	0.2%
14000000US06029002402	Census Tract 24.02; Kern County; California	4922	50 mins	47.7%	2348	0.456%	100%							100%	0.5%
14000000US06029000905	Census Tract 9.05; Kern County; California	2784	50 mins	47.7%	1328	0.258%	100%							100%	0.3%
14000000US06029000906	Census Tract 9.06; Kern County; California	4089	50 mins	47.7%	1951	0.379%	100%							100%	0.4%
14000000US06029000907	Census Tract 9.07; Kern County; California	2256	50 mins	47.7%	1076	0.209%	100%							100%	0.2%
14000000US06029000911	Census Tract 9.11; Kern County; California	2487	50 mins	47.7%	1187	0.230%	100%							100%	0.2%
14000000US06029000912	Census Tract 9.12; Kern County; California	3917	50 mins	47.7%	1869	0.363%	100%							100%	0.4%
14000000US06029000913	Census Tract 9.13; Kern County; California	3768	50 mins	47.7%	1798	0.349%	100%							100%	0.3%
14000000US06029000914	Census Tract 9.14; Kern County; California	4181	50 mins	47.7%	1995	0.387%	100%							100%	0.4%
14000000US06029001105	Census Tract 11.05; Kern County; California	3644	50 mins	47.7%	1739	0.337%	100%							100%	0.3%
14000000US06029001106	Census Tract 11.06; Kern County; California	2722	50 mins	47.7%	1299	0.252%	100%							100%	0.3%
14000000US06029001107	Census Tract 11.07; Kern County; California	2702	50 mins	47.7%	1289	0.250%	100%							100%	0.3%
14000000US06029001201	Census Tract 12.01; Kern County; California	2878	50 mins	47.7%	1373	0.266%	100%							100%	0.3%
14000000US06029001202	Census Tract 12.02; Kern County; California	6420	50 mins	47.7%	3063	0.594%	100%							100%	0.6%
14000000US06029001500	Census Tract 15; Kern County; California	2819	50 mins	47.7%	1345	0.261%	100%							100%	0.3%
14000000US06029001902	Census Tract 19.02; Kern County; California	4383	50 mins	47.7%	2091	0.406%	100%							100%	0.4%
14000000US06029002001	Census Tract 20.01; Kern County; California	3707	50 mins	47.7%	1769	0.343%	100%							100%	0.3%
14000000US06029002002	Census Tract 20.02; Kern County; California	4599	50 mins	47.7%	2194	0.426%	100%							100%	0.4%
14000000US06029002100	Census Tract 21; Kern County; California	3390	50 mins	47.7%	1617	0.314%	100%							100%	0.3%
14000000US06029002201	Census Tract 22.01; Kern County; California	2765	50 mins	47.7%	1319	0.256%	100%							100%	0.3%
14000000US06029002202	Census Tract 22.02; Kern County; California	3659	50 mins	47.7%	1746	0.339%	100%							100%	0.3%
14000000US06029002302	Census Tract 23.02; Kern County; California	4047	50 mins	47.7%	1931	0.375%	100%							100%	0.4%
14000000US06029002304	Census Tract 23.04; Kern County; California	3840	50 mins	47.7%	1832	0.356%	100%							100%	0.4%
14000000US06029002305	Census Tract 23.05; Kern County; California	2679	50 mins	47.7%	1278	0.248%	100%							100%	0.2%
14000000US06029002501	Census Tract 25.01; Kern County; California	4429	50 mins	47.7%	2113	0.410%	100%							100%	0.4%
14000000US06029002502	Census Tract 25.02; Kern County; California	2167	50 mins	47.7%	1034	0.201%	100%							100%	0.2%
14000000US06029002503	Census Tract 25.03; Kern County; California	3711	50 mins	47.7%	1771	0.344%	100%							100%	0.3%
14000000US06029002600	Census Tract 26; Kern County; California	3429	50 mins	47.7%	1636	0.317%	100%							100%	0.3%
14000000US06029002701	Census Tract 27.01; Kern County; California	2968	50 mins	47.7%	1416	0.275%	100%							100%	0.3%
14000000US06029002702	Census Tract 27.02; Kern County; California	3357	50 mins	47.7%	1602	0.311%	100%							100%	0.3%
14000000US06029003002	Census Tract 30.02; Kern County; California	3575	50 mins	47.7%	1706	0.331%	100%							100%	0.3%
14000000US06029005104	Census Tract 51.04; Kern County; California	4111	50 mins	47.7%	1961	0.381%	100%							100%	0.4%
14000000US06029003305	Census Tract 33.05; Kern County; California	3448	50 mins	47.7%	1645	0.319%				100%				100%	0.3%
14000000US06029003308	Census Tract 33.08; Kern County; California	2019	50 mins	47.7%	963	0.187%				100%				100%	0.2%
14000000US06037900102	Census Tract 9001.02; Los Angeles County; California	782	55 mins	30.1%	235	0.046%			40%	60%				100%	0.0%
14000000US06037900103	Census Tract 9001.03; Los Angeles County; California	6514	55 mins	30.1%	1961	0.381%			40%	60%				100%	0.4%
14000000US06037900104	Census Tract 9001.04; Los Angeles County; California	6593	55 mins	30.1%	1985	0.385%			40%	60%				100%	0.4%
14000000US06029000904	Census Tract 9.04; Kern County; California	3836	55 mins	30.1%	1155	0.224%	100%							100%	0.2%
14000000US06029000908	Census Tract 9.08; Kern County; California	4647	55 mins	30.1%	1399	0.271%	100%							100%	0.3%
14000000US06029000909	Census Tract 9.09; Kern County; California	2607	55 mins	30.1%	785	0.152%	100%							100%	0.2%
14000000US06029001301	Census Tract 13.01; Kern County; California	4802	55 mins	30.1%	1446	0.281%	100%							100%	0.3%
14000000US06029001302	Census Tract 13.02; Kern County; California	2317	55 mins	30.1%	697	0.135%	100%							100%	0.1%
14000000US06029001600	Census Tract 16; Kern County; California	2278	55 mins	30.1%	686	0.133%	100%							100%	0.1%
14000000US06029001700	Census Tract 17; Kern County; California	4214	55 mins	30.1%	1269	0.246%	100%							100%	0.2%
14000000US06029001801	Census Tract 18.01; Kern County; California	5752	55 mins	30.1%	1732	0.336%	100%							100%	0.3%
14000000US06029001901	Census Tract 19.01; Kern County; California	3860	55 mins	30.1%	1162	0.225%	100%							100%	0.2%
14000000US06029002901	Census Tract 29.01; Kern County; California	3391	55 mins	30.1%	1021	0.198%	100%							100%	0.2%
14000000US06029002902	Census Tract 29.02; Kern County; California	4038	55 mins	30.1%	1216	0.236%	100%							100%	0.2%
14000000US06029003001	Census Tract 30.01; Kern County; California	4132	55 mins	30.1%	1244	0.241%	100%							100%	0.2%
14000000US06029006403	Census Tract 64.03; Kern County; California	5953	55 mins	30.1%	1792	0.348%	100%							100%	0.3%
14000000US06029006404	Census Tract 64.04; Kern County; California	3551	55 mins	30.1%	1069	0.207%	100%							100%	0.2%
14000000US06029006405	Census Tract 64.05; Kern County; California	2543	55 mins	30.1%	766	0.149%	100%							100%	0.1%
14000000US06029006406	Census Tract 64.06; Kern County; California	4063	55 mins	30.1%	1223	0.237%	100%							100%	0.2%
14000000US06029000300	Census Tract 3; Kern County; California	4956	55 mins	30.1%	1492	0.290%	100%							100%	0.3%
14000000US06029000400	Census Tract 4; Kern County; California	4840	55 mins	30.1%	1457	0.283%	100%							100%	0.3%
14000000US06029000504	Census Tract 5.04; Kern County; California	4851	55 mins	30.1%	1460	0.283%	100%							100%	0.3%
14000000US06029000506	Census Tract 5.06; Kern County; California	2901	55 mins	30.1%	873	0.169%	100%							100%	0.2%
14000000US06029000507	Census Tract 5.07; Kern County; California	3843	55 mins	30.1%	1157	0.225%	100%							100%	0.2%
14000000US06029000602	Census Tract 6.02; Kern County; California	2888	55 mins	30.1%	869	0.169%	100%							100%	0.2%
14000000US06029000603	Census Tract 6.03; Kern County; California	2272	55 mins	30.1%	684	0.133%	100%							100%	0.1%
14000000US06029000701	Census Tract 7.01; Kern County; California	2962	55 mins	30.1%	892	0.173%	100%							100%	0.2%
14000000US06029000702	Census Tract 7.02; Kern County; California	2710	55 mins	30.1%	816	0.158%	100%							100%	0.2%
14000000US06029000800	Census Tract 8; Kern County; California	5353	55 mins	30.1%	1611	0.313%	100%							100%	0.3%
14000000US06029000902	Census Tract 9.02; Kern County; California	3034	55 mins	30.1%	913	0.177%	100%							100%	0.2%
14000000US06029000903	Census Tract 9.03; Kern County; California	4466	55 mins	30.1%	1344	0.261%	100%							100%	0.3%
14000000US06029001401	Census Tract 14.01; Kern County; California	4253	55 mins	30.1%	1280	0.248%	100%							100%	0.2%
14000000US06029001402	Census Tract 14.02; Kern County; California	2729	55 mins	30.1%	822	0.159%	100%							100%	0.2%
14000000US06029001803	Census Tract 18.03; Kern County; California	2913	55 mins	30.1%	877	0.170%	100%							100%	0.2%
14000000US06029001804	Census Tract 18.04; Kern County; California	3490	55 mins	30.1%	1051	0.204%	100%							100%	0.2%
14000000US06029002804	Census Tract 28.04; Kern County; California	2080	55 mins	30.1%	626	0.122%	100%							100%	0.1%
14000000US06029002807	Census Tract 28.07; Kern County; California	3972	55 mins	30.1%	1196	0.232%	100%							100%	0.2%
14000000US06029002813	Census Tract 28.13; Kern County; California	4267	55 mins	30.1%	1284	0.249%	100%							100%	0.2%
14000000US06029002814	Census Tract 28.14; Kern County; California	4032	55 mins	30.1%	1214	0.236%	100%							100%	0.2%
14000000US06029002815	Census Tract 28.15; Kern County; California	4601	55 mins	30.1%	1385	0.269%	100%							100%	0.3%
14000000US06029002824	Census Tract 28.24; Kern County; California	2260	55 mins	30.1%	680	0.132%	100%							100%	0.1%
14000000US06029002825	Census Tract 28.25; Kern County; California	2901	55 mins	30.1%	873	0.169%	100%							100%	0.2%
14000000US06029003103	Census Tract 31.03; Kern County; California	4204	55 mins	30.1%	1266	0.246%	100%							100%	0.2%
14000000US06029003112	Census Tract 31.12; Kern County; California	6096	55 mins	30.1%	1835	0.356%	100%							100%	0.4%
14000000US06029003113	Census Tract 31.13; Kern County; California	5239	55 mins	30.1%	1577	0.306%	100%							100%	0.3%
14000000US06029003125	Census Tract 31.25; Kern County; California	3434	55 mins	30.1%	1034	0.201%	100%							100%	0.2%
14000000US06029003126	Census Tract 31.26; Kern County; California	5823	55 mins	30.1%	1753	0.340%	100%							100%	0.3%
14000000US06029003127	Census Tract 31.27; Kern County; California	3686	55 mins	30.1%	1110	0.215%	100%							100%	0.2%
14000000US06029003128	Census Tract 31.28; Kern County; California	4574	55 mins	30.1%	1377	0.267%	100%							100%	0.3%
14000000US06029003136	Census Tract 31.36; Kern County; California	1748	55 mins	30.1%	526	0.102%	100%							100%	0.1%
14000000US06029003137	Census Tract 31.37; Kern County; California	3192	55 mins	30.1%	961	0.186%	100%							100%	0.2%
14000000US06029003207	Census Tract 32.07; Kern County; California	5013	55 mins	30.1%	1509	0.293%	100%							100%	0.3%
14000000US06029003812	Census Tract 38.12; Kern County; California	5030	55 mins	30.1%	1514	0.294%	100%							100%	0.3%
14000000US06029006201	Census Tract 62.01; Kern County; California	2473	55 mins	30.1%	744	0.144%	100%							100%	0.1%
14000000US06029006202	Census Tract 62.02; Kern County; California	7943	55 mins	30.1%	2391	0.464%	100%							100%	0.5%
14000000US06029000103	Census Tract 1.03; Kern County; California	5163	55 mins	30.1%	1554	0.302%	100%							100%	0.3%
14000000US06029003124	Census Tract 31.24; Kern County; California	6159	55 mins	30.1%	1854	0.360%	100%							100%	0.4%
14000000US06029003132	Census Tract 31.32; Kern County; California	4776	55 mins	30.1%	1438	0.279%	100%							100%	0.3%
14000000US06029003133	Census Tract 31.33; Kern County; California	2723	55 mins	30.1%	820	0.159%	100%							100%	0.2%
14000000US06029003209	Census Tract 32.09; Kern County; California	4811	55 mins	30.1%	1448	0.281%	100%							100%	0.3%
14000000US06029003211	Census Tract 32.11; Kern County; California	4897	55 mins	30.1%	1474	0.286%	100%							100%	0.3%
14000000US06029003217	Census Tract 32.17; Kern County; California	3234	55 mins	30.1%	974	0.189%	100%							100%	0.2%
14000000US06029005510	Census Tract 55.10; Kern County; California	1659	1:00	0.0%	0	0.000%		100%						100%	0.0%
14000000US06029006011	Census Tract 60.11; Kern County; California	2918	1:00	0.0%	0	0.000%				100%				100%	0.0%
14000000US06037911001	Census Tract 9110.01; Los Angeles County; California	3658	1:00	0.0%	0	0.000%			40%	60%				100%	0.0%
14000000US06029005509	Census Tract 55.09; Kern County; California	4481	1:10	0.0%	0	0.000%		100%						100%	0.0%
14000000US06071009134	Census Tract 91.34; San Bernardino County; California	1009	1:00	0.0%	0	0.000%					100%			100%	0.0%
14000000US06029000105	Census Tract 1.05; Kern County; California	4006	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000201	Census Tract 2.01; Kern County; California	3718	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000202	Census Tract 2.02; Kern County; California	3458	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000505	Census Tract 5.05; Kern County; California	3976	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000508	Census Tract 5.08; Kern County; California	1643	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000601	Census Tract 6.01; Kern County; California	2025	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002806	Census Tract 28.06; Kern County; California	2403	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002811	Census Tract 28.11; Kern County; California	3524	1:00	0.0%	0	0.000%	100%							100%	0.0%

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Discovery Solar Storage Project
Population Gravity Model
(Uses Total Population data by Census Tract; No impact from Travel times 1:00 or greater)

							REGIONAL TRAVEL ROUTES								
							To/From North		To/From South		To/From East		Local Roadways		
Geography	Geographic Area Name	Total Population	Estimated Drive Time to Site	% Population in Drive Time Zone	Effective Total Population in Drive Time Zone	% of Total Population	CA-58 (via Tehachapi Pass)	CA-14	C-14 (to Backus Road)	90th Street W to Tehachapi Willow Springs Road	Ca-58 (East of Exit 172)	Roasamond Blvd to Tehachapi Willow Springs Road from South	In Mojave	100% CHECK	Total
14000000US06029002816	Census Tract 28.16; Kern County; California	6947	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002817	Census Tract 28.17; Kern County; California	5402	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002818	Census Tract 28.18; Kern County; California	4933	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002819	Census Tract 28.19; Kern County; California	4482	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002823	Census Tract 28.23; Kern County; California	4826	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003203	Census Tract 32.03; Kern County; California	2135	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003208	Census Tract 32.08; Kern County; California	6857	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003212	Census Tract 32.12; Kern County; California	6191	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003214	Census Tract 32.14; Kern County; California	2498	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003215	Census Tract 32.15; Kern County; California	4052	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003806	Census Tract 38.06; Kern County; California	5634	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003808	Census Tract 38.08; Kern County; California	4745	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003810	Census Tract 38.10; Kern County; California	2513	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003811	Census Tract 38.11; Kern County; California	2581	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003819	Census Tract 38.19; Kern County; California	4600	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003820	Census Tract 38.20; Kern County; California	2857	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003821	Census Tract 38.21; Kern County; California	4226	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06037920102	Census Tract 9201.02; Los Angeles County; California	4899	1:05	0.0%	0	0.000%			100%					100%	0.0%
14000000US06071009131	Census Tract 91.31; San Bernardino County; Californ	5746	1:20	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071009132	Census Tract 91.32; San Bernardino County; Californ	2430	1:20	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071011601	Census Tract 116.01; San Bernardino County; Califor	5532	1:15	0.0%	0	0.000%					100%			100%	0.0%
14000000US06029000106	Census Tract 1.06; Kern County; California	2879	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000509	Census Tract 5.09; Kern County; California	2498	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000510	Census Tract 5.10; Kern County; California	4757	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002820	Census Tract 28.20; Kern County; California	7100	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002821	Census Tract 28.21; Kern County; California	4842	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029002822	Census Tract 28.22; Kern County; California	3339	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003129	Census Tract 31.29; Kern County; California	3553	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003130	Census Tract 31.30; Kern County; California	4960	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003131	Census Tract 31.31; Kern County; California	3305	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003134	Census Tract 31.34; Kern County; California	3450	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003135	Census Tract 31.35; Kern County; California	4320	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003210	Census Tract 32.10; Kern County; California	4826	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003213	Census Tract 32.13; Kern County; California	1836	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003216	Census Tract 32.16; Kern County; California	3727	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003218	Census Tract 32.18; Kern County; California	6161	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003222	Census Tract 32.22; Kern County; California	2102	1:05	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003807	Census Tract 38.07; Kern County; California	3357	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003814	Census Tract 38.14; Kern County; California	7540	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003815	Census Tract 38.15; Kern County; California	6710	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003816	Census Tract 38.16; Kern County; California	3190	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003817	Census Tract 38.17; Kern County; California	4243	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003818	Census Tract 38.18; Kern County; California	5687	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003822	Census Tract 38.22; Kern County; California	2828	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003823	Census Tract 38.23; Kern County; California	4487	1:05	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003824	Census Tract 38.24; Kern County; California	2694	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003825	Census Tract 38.25; Kern County; California	2703	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003826	Census Tract 38.26; Kern County; California	2964	1:05	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003827	Census Tract 38.27; Kern County; California	2693	1:05	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029005207	Census Tract 52.07; Kern County; California	1910	1:20	0.0%	0	0.000%		100%						100%	0.0%
14000000US06071009126	Census Tract 91.26; San Bernardino County; Californ	5862	1:25	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071009129	Census Tract 91.29; San Bernardino County; Californ	7244	1:25	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071009133	Census Tract 91.33; San Bernardino County; Californ	7976	1:25	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071011900	Census Tract 119; San Bernardino County; California	2239	1:20	0.0%	0	0.000%					100%			100%	0.0%
14000000US06071980200	Census Tract 9802; San Bernardino County; Californi	3618	1:20	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06029000102	Census Tract 1.02; Kern County; California	3154	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029000104	Census Tract 1.04; Kern County; California	1388	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003219	Census Tract 32.19; Kern County; California	5594	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003220	Census Tract 32.20; Kern County; California	4653	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003221	Census Tract 32.21; Kern County; California	3700	1:05	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003900	Census Tract 39; Kern County; California	3388	1:10	0.0%	0	0.000%	100%							100%	0.0%
14000000US06071008901	Census Tract 89.01; San Bernardino County; Californ	2097	1:20	0.0%	0	0.000%		100%						100%	0.0%
14000000US06071009915	Census Tract 99.15; San Bernardino County; Californ	3953	1:25	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071011700	Census Tract 117; San Bernardino County; California	1649	1:25	0.0%	0	0.000%					100%			100%	0.0%
14000000US06111009700	Census Tract 97; Ventura County; California	3032	greater than 1:30	0.0%	0	0.000%				100%				100%	0.0%
14000000US06029005103	Census Tract 51.03; Kern County; California	2163	1:00	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029005203	Census Tract 52.03; Kern County; California	4278	greater than 1:30	0.0%	0	0.000%		100%						100%	0.0%
14000000US06029005206	Census Tract 52.06; Kern County; California	2521	1:25	0.0%	0	0.000%	100%							100%	0.0%
14000000US06071009726	Census Tract 97.26; San Bernardino County; Californ	3047	greater than 1:30	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06071012101	Census Tract 121.01; San Bernardino County; Califor	6618	greater than 1:30	0.0%	0	0.000%			50%		50%			100%	0.0%
14000000US06029003304	Census Tract 33.04; Kern County; California	2683	1:15	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029004001	Census Tract 40.01; Kern County; California	4570	1:10	0.0%	0	0.000%	100%							100%	0.0%
14000000US06029003307	Census Tract 33.07; Kern County; California	2303	1:10	0.0%	0	0.000%	50%			50%				100%	0.0%
14000000US06029005208	Census Tract 52.08; Kern County; California	2885	1:25	0.0%	0	0.000%		100%						100%	0.0%
	Total	**1,213,472**			**515,304**	**100%**	**34.21%**	**2.83%**	**25.07%**	**34.01%**	**0.46%**	**2.77%**	**0.66%**	100.00%	100.0%
						USE	**34%**	**3%**	**25%**	**34%**	**0%**	**3%**	**1%**	100.00%	

James Vorosmarti
Tetra Tech

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APPENDIX D: INTERSECTION CAPACITY ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	9	0	38	0	64	8	79	100	1
Future Vol, veh/h	0	0	2	9	0	38	0	64	8	79	100	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	50	78	0	40	0	11	50	18	6	100
Mvmt Flow	0	0	2	10	0	42	0	71	9	88	111	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	8.9	7.9	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	19%	44%
Vol Thru, %	89%	0%	0%	56%
Vol Right, %	11%	100%	81%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	2	47	180
LT Vol	0	0	9	79
Through Vol	64	0	0	100
RT Vol	8	2	38	1
Lane Flow Rate	80	2	52	200
Geometry Grp	1	1	1	1
Degree of Util (X)	0.098	0.002	0.079	0.247
Departure Headway (Hd)	4.388	4.026	5.44	4.446
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	892	662	796
Service Time	2.394	2.035	3.446	2.535
HCM Lane V/C Ratio	0.097	0.002	0.079	0.251
HCM Control Delay	7.9	7	8.9	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0	0.3	1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	25	100	4	45	0	0	0	0	12	0	4
Future Vol, veh/h	0	25	100	4	45	0	0	0	0	12	0	4
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	28	7	0	31	0	0	0	0	8	0	0
Mvmt Flow	0	33	133	5	60	0	0	0	0	16	0	5

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	166	0	0	170	236	60
Stage 1	-	-	-	-	-	-	70	70	-
Stage 2	-	-	-	-	-	-	100	166	-
Critical Hdwy	-	-	-	4.1	-	-	6.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.572	4	3.3
Pot Cap-1 Maneuver	0	-	-	1424	-	0	807	668	1011
Stage 1	0	-	-	-	-	0	938	841	-
Stage 2	0	-	-	-	-	0	909	765	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1424	-	-	804	0	1011
Mov Cap-2 Maneuver	-	-	-	-	-	-	804	0	-
Stage 1	-	-	-	-	-	-	938	0	-
Stage 2	-	-	-	-	-	-	905	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.6	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1424	-	847
HCM Lane V/C Ratio	-	-	0.004	-	0.025
HCM Control Delay (s)	-	-	7.5	0	9.4
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1

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	9	27	0	0	12	2	36	0	8	0	0	0
Future Vol, veh/h	9	27	0	0	12	2	36	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	26	0	0	42	0	25	0	0	0	0	0
Mvmt Flow	13	38	0	0	17	3	51	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	20	0	-	-	-	0	83	84	38
Stage 1	-	-	-	-	-	-	64	64	-
Stage 2	-	-	-	-	-	-	19	20	-
Critical Hdwy	4.1	-	-	-	-	-	6.65	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.65	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.65	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.725	4	3.3
Pot Cap-1 Maneuver	1609	-	0	0	-	-	865	810	1040
Stage 1	-	-	0	0	-	-	903	846	-
Stage 2	-	-	0	0	-	-	947	883	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1609	-	-	-	-	-	858	0	1040
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	0	-
Stage 1	-	-	-	-	-	-	896	0	-
Stage 2	-	-	-	-	-	-	947	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.8	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	886	1609	-	-	-
HCM Lane V/C Ratio	0.07	0.008	-	-	-
HCM Control Delay (s)	9.4	7.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	93	4	63	190
Future Vol, veh/h	4	25	93	4	63	190
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	88	88	88	88	88	88
Heavy Vehicles, %	75	28	21	25	11	12
Mvmt Flow	5	28	106	5	72	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	469	109	0	0	111	0
Stage 1	109	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	7.15	6.48	-	-	4.21	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.552	-	-	2.299	-
Pot Cap-1 Maneuver	440	879	-	-	1425	-
Stage 1	762	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	415	879	-	-	1425	-
Mov Cap-2 Maneuver	415	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	762	1425	-
HCM Lane V/C Ratio	-	-	0.043	0.05	-
HCM Control Delay (s)	-	-	9.9	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	895	1084	1022	895	-	1622	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	895	1084	1022	895	-	1622	-	-	-	-	-
Mov Cap-2 Maneuver	-	895	-	1022	895	-	-	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	895	1084	1022	895	-	1622	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	895	1084	1022	895	-	1622	-	-	-	-	-
Mov Cap-2 Maneuver	-	895	-	1022	895	-	-	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	1	57	0	131	9	38	80	1
Future Vol, veh/h	0	0	0	9	1	57	0	131	9	38	80	1
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, %	0	0	0	11	0	4	0	3	0	5	4	0
Mvmt Flow	0	0	0	9	1	60	0	138	9	40	84	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	7.6	8.1	8.1
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	13%	32%
Vol Thru, %	94%	100%	1%	67%
Vol Right, %	6%	0%	85%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	0	67	119
LT Vol	0	0	9	38
Through Vol	131	0	1	80
RT Vol	9	0	57	1
Lane Flow Rate	147	0	71	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0	0.082	0.149
Departure Headway (Hd)	4.132	4.586	4.206	4.281
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	859	0	857	829
Service Time	2.203	2.588	2.206	2.353
HCM Lane V/C Ratio	0.171	0	0.083	0.151
HCM Control Delay	8.1	7.6	7.6	8.1
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.6	0	0.3	0.5

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	28	55	7	90	0	0	0	0	11	0	27
Future Vol, veh/h	0	28	55	7	90	0	0	0	0	11	0	27
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	14	5	0	2	0	0	0	0	0	0	11
Mvmt Flow	0	31	62	8	101	0	0	0	0	12	0	30

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	93	0	0	179	210	101
Stage 1	-	-	-	-	-	-	117	117	-
Stage 2	-	-	-	-	-	-	62	93	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.399
Pot Cap-1 Maneuver	0	-	-	1514	-	0	815	691	930
Stage 1	0	-	-	-	-	0	913	803	-
Stage 2	0	-	-	-	-	0	966	822	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1514	-	-	810	0	930
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	0	-
Stage 1	-	-	-	-	-	-	913	0	-
Stage 2	-	-	-	-	-	-	960	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.5	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1514	-	892
HCM Lane V/C Ratio	-	-	0.005	-	0.048
HCM Control Delay (s)	-	-	7.4	0	9.2
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.2

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	28	0	0	19	6	79	0	3	0	0	0
Future Vol, veh/h	11	28	0	0	19	6	79	0	3	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	9	11	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	13	32	0	0	22	7	91	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	29	0	-	-	-	0	84	87	32
Stage 1	-	-	-	-	-	-	58	58	-
Stage 2	-	-	-	-	-	-	26	29	-
Critical Hdwy	4.19	-	-	-	-	-	6.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.5	-
Follow-up Hdwy	2.281	-	-	-	-	-	3.527	4	3.3
Pot Cap-1 Maneuver	1540	-	0	0	-	-	915	807	1048
Stage 1	-	-	0	0	-	-	962	851	-
Stage 2	-	-	0	0	-	-	994	875	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1540	-	-	-	-	-	907	0	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	907	0	-
Stage 1	-	-	-	-	-	-	953	0	-
Stage 2	-	-	-	-	-	-	994	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	911	1540	-	-	-
HCM Lane V/C Ratio	0.103	0.008	-	-	-
HCM Control Delay (s)	9.4	7.4	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	83	197	2	17	103
Future Vol, veh/h	1	83	197	2	17	103
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	90	90	90	90	90	90
Heavy Vehicles, %	0	4	2	50	41	10
Mvmt Flow	1	92	219	2	19	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	220	0	0	221	0
Stage 1	220	-	-	-	-	-
Stage 2	152	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.51	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.569	-
Pot Cap-1 Maneuver	633	815	-	-	1148	-
Stage 1	821	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	815	-	-	1148	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	812	1148	-
HCM Lane V/C Ratio	-	-	0.115	0.016	-
HCM Control Delay (s)	-	-	10	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	0	0	0
HCM LOS	-	-	-	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0
LT Vol	0	0	0	0
Through Vol	0	0	0	0
RT Vol	0	0	0	0
Lane Flow Rate	0	0	0	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	0	0	0
Service Time	1.934	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0	0
HCM Control Delay	6.9	6.9	6.9	6.9
HCM Lane LOS	N	N	N	N
HCM 95th-tile Q	0	0	0	0

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	0	0	0
HCM LOS	-	-	-	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0
LT Vol	0	0	0	0
Through Vol	0	0	0	0
RT Vol	0	0	0	0
Lane Flow Rate	0	0	0	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	0	0	0
Service Time	1.934	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0	0
HCM Control Delay	6.9	6.9	6.9	6.9
HCM Lane LOS	N	N	N	N
HCM 95th-tile Q	0	0	0	0

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	9	0	207	0	281	8	95	120	1
Future Vol, veh/h	0	0	2	9	0	207	0	281	8	95	120	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	50	78	0	40	0	11	50	18	6	100
Mvmt Flow	0	0	2	10	0	230	0	312	9	106	133	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	13.5	12.8	11.8
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	4%	44%
Vol Thru, %	97%	0%	0%	56%
Vol Right, %	3%	100%	96%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	289	2	216	216
LT Vol	0	0	9	95
Through Vol	281	0	0	120
RT Vol	8	2	207	1
Lane Flow Rate	321	2	240	240
Geometry Grp	1	1	1	1
Degree of Util (X)	0.469	0.003	0.411	0.37
Departure Headway (Hd)	5.258	5.327	6.168	5.554
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	690	670	583	648
Service Time	3.258	3.374	4.199	3.583
HCM Lane V/C Ratio	0.465	0.003	0.412	0.37
HCM Control Delay	12.8	8.4	13.5	11.8
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2.5	0	2	1.7

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	0	28	113	4	191	0	0	0	0	12	0	27
Future Vol, veh/h	0	28	113	4	191	0	0	0	0	12	0	27
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	28	7	0	31	0	0	0	0	8	0	0
Mvmt Flow	0	37	151	5	255	0	0	0	0	16	0	36

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	188	0	0	378	453	255
Stage 1	-	-	-	-	-	-	265	265	-
Stage 2	-	-	-	-	-	-	113	188	-
Critical Hdwy	-	-	-	4.1	-	-	6.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.572	4	3.3
Pot Cap-1 Maneuver	0	-	-	1398	-	0	612	506	789
Stage 1	0	-	-	-	-	0	766	693	-
Stage 2	0	-	-	-	-	0	897	748	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1398	-	-	610	0	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	610	0	-
Stage 1	-	-	-	-	-	-	766	0	-
Stage 2	-	-	-	-	-	-	893	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.2	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1398	-	724
HCM Lane V/C Ratio	-	-	0.004	-	0.072
HCM Control Delay (s)	-	-	7.6	0	10.4
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2

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	12	27	0	0	12	2	182	0	8	0	0	0
Future Vol, veh/h	12	27	0	0	12	2	182	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	26	0	0	42	0	25	0	0	0	0	0
Mvmt Flow	17	38	0	0	17	3	256	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	20	0	-	-	-	0	91	92	38
Stage 1	-	-	-	-	-	-	72	72	-
Stage 2	-	-	-	-	-	-	19	20	-
Critical Hdwy	4.1	-	-	-	-	-	6.65	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.65	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.65	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.725	4	3.3
Pot Cap-1 Maneuver	1609	-	0	0	-	-	856	802	1040
Stage 1	-	-	0	0	-	-	896	839	-
Stage 2	-	-	0	0	-	-	947	883	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1609	-	-	-	-	-	847	0	1040
Mov Cap-2 Maneuver	-	-	-	-	-	-	847	0	-
Stage 1	-	-	-	-	-	-	886	0	-
Stage 2	-	-	-	-	-	-	947	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	854	1609	-	-	-
HCM Lane V/C Ratio	0.313	0.011	-	-	-
HCM Control Delay (s)	11.1	7.3	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	1.3	0	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	111	4	63	389
Future Vol, veh/h	4	25	111	4	63	389
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	88	88	88	88	88	88
Heavy Vehicles, %	75	28	21	25	11	12
Mvmt Flow	5	28	126	5	72	442

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	715	129	0	0	131	0
Stage 1	129	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	7.15	6.48	-	-	4.21	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.552	-	-	2.299	-
Pot Cap-1 Maneuver	307	856	-	-	1400	-
Stage 1	745	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	856	-	-	1400	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1400	-
HCM Lane V/C Ratio	-	-	0.049	0.051	-
HCM Control Delay (s)	-	-	10.6	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	11	11	0	6	121	108	119	67	255	63
Future Vol, veh/h	6	0	11	11	0	6	121	108	119	67	255	63
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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	12	12	0	7	132	117	129	73	277	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	906	967	311	909	937	182	345	0	0	246	0	0
Stage 1	457	457	-	446	446	-	-	-	-	-	-	-
Stage 2	449	510	-	463	491	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	257	254	729	256	265	861	1214	-	-	1320	-	-
Stage 1	583	568	-	591	574	-	-	-	-	-	-	-
Stage 2	589	538	-	579	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	218	206	729	215	215	861	1214	-	-	1320	-	-
Mov Cap-2 Maneuver	218	206	-	215	215	-	-	-	-	-	-	-
Stage 1	508	529	-	515	501	-	-	-	-	-	-	-
Stage 2	510	469	-	530	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	18.2	2.9	1.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1214	-	-	399	292	1320	-	-
HCM Lane V/C Ratio	0.108	-	-	0.046	0.063	0.055	-	-
HCM Control Delay (s)	8.3	0	-	14.5	18.2	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	13	0	6	4	342	142	73	202	2
Future Vol, veh/h	0	0	1	13	0	6	4	342	142	73	202	2
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	1	14	0	7	4	372	154	79	220	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	840	913	221	837	837	449	222	0	0	526	0	0
Stage 1	379	379	-	457	457	-	-	-	-	-	-	-
Stage 2	461	534	-	380	380	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	285	273	819	286	303	610	1347	-	-	1041	-	-
Stage 1	643	615	-	583	568	-	-	-	-	-	-	-
Stage 2	581	524	-	642	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	262	248	819	266	275	610	1347	-	-	1041	-	-
Mov Cap-2 Maneuver	262	248	-	266	275	-	-	-	-	-	-	-
Stage 1	640	561	-	581	566	-	-	-	-	-	-	-
Stage 2	572	522	-	585	561	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	16.9	0.1	2.3
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1347	-	-	819	324	1041	-	-
HCM Lane V/C Ratio	0.003	-	-	0.001	0.064	0.076	-	-
HCM Control Delay (s)	7.7	0	-	9.4	16.9	8.7	0	-
HCM Lane LOS	A	A	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	1	73	0	151	9	207	297	1
Future Vol, veh/h	0	0	0	9	1	73	0	151	9	207	297	1
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, %	0	0	0	11	0	4	0	3	0	5	4	0
Mvmt Flow	0	0	0	9	1	77	0	159	9	218	313	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	8.9	9.1	15.8
HCM LOS	-	A	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	11%	41%
Vol Thru, %	94%	100%	1%	59%
Vol Right, %	6%	0%	88%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	0	83	505
LT Vol	0	0	9	207
Through Vol	151	0	1	297
RT Vol	9	0	73	1
Lane Flow Rate	168	0	87	532
Geometry Grp	1	1	1	1
Degree of Util (X)	0.22	0	0.125	0.661
Departure Headway (Hd)	4.71	5.63	5.149	4.478
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	761	0	694	808
Service Time	2.749	3.696	3.198	2.508
HCM Lane V/C Ratio	0.221	0	0.125	0.658
HCM Control Delay	9.1	8.7	8.9	15.8
HCM Lane LOS	A	N	A	C
HCM 95th-tile Q	0.8	0	0.4	5.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	51	201	7	103	0	0	0	0	11	0	30
Future Vol, veh/h	0	51	201	7	103	0	0	0	0	11	0	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	14	5	0	2	0	0	0	0	0	0	11
Mvmt Flow	0	57	226	8	116	0	0	0	0	12	0	34

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	283	0	0	302	415	116
Stage 1	-	-	-	-	-	-	132	132	-
Stage 2	-	-	-	-	-	-	170	283	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.399
Pot Cap-1 Maneuver	0	-	-	1291	-	0	694	531	912
Stage 1	0	-	-	-	-	0	899	791	-
Stage 2	0	-	-	-	-	0	865	681	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1291	-	-	689	0	912
Mov Cap-2 Maneuver	-	-	-	-	-	-	689	0	-
Stage 1	-	-	-	-	-	-	899	0	-
Stage 2	-	-	-	-	-	-	859	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1291	-	839
HCM Lane V/C Ratio	-	-	0.006	-	0.055
HCM Control Delay (s)	-	-	7.8	0	9.5
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.2

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	34	28	0	0	19	6	92	0	3	0	0	0
Future Vol, veh/h	34	28	0	0	19	6	92	0	3	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	9	11	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	39	32	0	0	22	7	106	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	29	0	-	-	-	0	136	139	32
Stage 1	-	-	-	-	-	-	110	110	-
Stage 2	-	-	-	-	-	-	26	29	-
Critical Hdwy	4.19	-	-	-	-	-	6.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.5	-
Follow-up Hdwy	2.281	-	-	-	-	-	3.527	4	3.3
Pot Cap-1 Maneuver	1540	-	0	0	-	-	855	756	1048
Stage 1	-	-	0	0	-	-	912	808	-
Stage 2	-	-	0	0	-	-	994	875	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1540	-	-	-	-	-	833	0	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	833	0	-
Stage 1	-	-	-	-	-	-	888	0	-
Stage 2	-	-	-	-	-	-	994	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	838	1540	-	-	-
HCM Lane V/C Ratio	0.13	0.025	-	-	-
HCM Control Delay (s)	9.9	7.4	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	83	396	2	17	121
Future Vol, veh/h	1	83	396	2	17	121
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	90	90	90	90	90	90
Heavy Vehicles, %	0	4	2	50	41	10
Mvmt Flow	1	92	440	2	19	134

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	613	441	0	0	442	0
Stage 1	441	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.51	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.569	-
Pot Cap-1 Maneuver	459	612	-	-	939	-
Stage 1	653	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	449	612	-	-	939	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	609	939	-
HCM Lane V/C Ratio	-	-	0.153	0.02	-
HCM Control Delay (s)	-	-	12	8.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	0	121	119	0	61	11	263	11	6	125	6
Future Vol, veh/h	63	0	121	119	0	61	11	263	11	6	125	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	68	0	132	129	0	66	12	286	12	7	136	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	503	476	140	536	473	292	143	0	0	298	0	0
Stage 1	154	154	-	316	316	-	-	-	-	-	-	-
Stage 2	349	322	-	220	157	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	479	488	908	455	490	747	1440	-	-	1263	-	-
Stage 1	848	770	-	695	655	-	-	-	-	-	-	-
Stage 2	667	651	-	782	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	431	480	908	384	482	747	1440	-	-	1263	-	-
Mov Cap-2 Maneuver	431	480	-	384	482	-	-	-	-	-	-	-
Stage 1	840	765	-	688	648	-	-	-	-	-	-	-
Stage 2	602	644	-	665	763	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	18.5	0.3	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1440	-	-	658	460	1263	-	-
HCM Lane V/C Ratio	0.008	-	-	0.304	0.425	0.005	-	-
HCM Control Delay (s)	7.5	0	-	12.8	18.5	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	2.1	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	142	0	73	1	210	13	6	359	0
Future Vol, veh/h	2	0	4	142	0	73	1	210	13	6	359	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	4	154	0	79	1	228	14	7	390	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	648	390	643	641	235	390	0	0	242	0	0
Stage 1	404	404	-	237	237	-	-	-	-	-	-	-
Stage 2	277	244	-	406	404	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	364	389	658	386	393	804	1169	-	-	1324	-	-
Stage 1	623	599	-	766	709	-	-	-	-	-	-	-
Stage 2	729	704	-	622	599	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	326	386	658	381	390	804	1169	-	-	1324	-	-
Mov Cap-2 Maneuver	326	386	-	381	390	-	-	-	-	-	-	-
Stage 1	622	595	-	765	708	-	-	-	-	-	-	-
Stage 2	656	703	-	614	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	20.4	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1169	-	-	491	464	1324	-	-
HCM Lane V/C Ratio	0.001	-	-	0.013	0.504	0.005	-	-
HCM Control Delay (s)	8.1	0	-	12.4	20.4	7.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	2.8	0	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	9	0	38	0	64	8	79	100	1
Future Vol, veh/h	0	0	2	9	0	38	0	64	8	79	100	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	50	78	0	40	0	11	50	18	6	100
Mvmt Flow	0	0	2	10	0	42	0	71	9	88	111	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	8.9	7.9	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	19%	44%
Vol Thru, %	89%	0%	0%	56%
Vol Right, %	11%	100%	81%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	2	47	180
LT Vol	0	0	9	79
Through Vol	64	0	0	100
RT Vol	8	2	38	1
Lane Flow Rate	80	2	52	200
Geometry Grp	1	1	1	1
Degree of Util (X)	0.098	0.002	0.079	0.247
Departure Headway (Hd)	4.388	4.026	5.44	4.446
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	892	662	796
Service Time	2.394	2.035	3.446	2.535
HCM Lane V/C Ratio	0.097	0.002	0.079	0.251
HCM Control Delay	7.9	7	8.9	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0	0.3	1

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	33	100	36	47	0	0	0	0	107	0	4
Future Vol, veh/h	0	33	100	36	47	0	0	0	0	107	0	4
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	28	7	0	31	0	0	0	0	8	0	0
Mvmt Flow	0	44	133	48	63	0	0	0	0	143	0	5

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	177	0	0	270	336	63
Stage 1	-	-	-	-	-	-	159	159	-
Stage 2	-	-	-	-	-	-	111	177	-
Critical Hdwy	-	-	-	4.1	-	-	6.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.572	4	3.3
Pot Cap-1 Maneuver	0	-	-	1411	-	0	707	588	1007
Stage 1	0	-	-	-	-	0	855	770	-
Stage 2	0	-	-	-	-	0	899	756	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1411	-	-	682	0	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	0	-
Stage 1	-	-	-	-	-	-	855	0	-
Stage 2	-	-	-	-	-	-	868	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.3	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1411	-	690
HCM Lane V/C Ratio	-	-	0.034	-	0.214
HCM Control Delay (s)	-	-	7.6	0	11.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.8

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	130	0	0	46	34	36	0	251	0	0	0
Future Vol, veh/h	9	130	0	0	46	34	36	0	251	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	26	0	0	42	0	25	0	0	0	0	0
Mvmt Flow	13	183	0	0	65	48	51	0	354	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	113	0	-	-	-	0	298	322	183
Stage 1	-	-	-	-	-	-	209	209	-
Stage 2	-	-	-	-	-	-	89	113	-
Critical Hdwy	4.1	-	-	-	-	-	6.65	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.65	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.65	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.725	4	3.3
Pot Cap-1 Maneuver	1489	-	0	0	-	-	648	599	865
Stage 1	-	-	0	0	-	-	774	733	-
Stage 2	-	-	0	0	-	-	880	806	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1489	-	-	-	-	-	642	0	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	0	-
Stage 1	-	-	-	-	-	-	766	0	-
Stage 2	-	-	-	-	-	-	880	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	829	1489	-	-	-
HCM Lane V/C Ratio	0.488	0.009	-	-	-
HCM Control Delay (s)	13.4	7.4	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.7	0	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	93	4	63	190
Future Vol, veh/h	4	25	93	4	63	190
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	88	88	88	88	88	88
Heavy Vehicles, %	75	28	21	25	11	12
Mvmt Flow	5	28	106	5	72	216

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	469	109	0	0	111	0
Stage 1	109	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	7.15	6.48	-	-	4.21	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.552	-	-	2.299	-
Pot Cap-1 Maneuver	440	879	-	-	1425	-
Stage 1	762	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	415	879	-	-	1425	-
Mov Cap-2 Maneuver	415	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	762	1425	-
HCM Lane V/C Ratio	-	-	0.043	0.05	-
HCM Control Delay (s)	-	-	9.9	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	895	1084	1022	895	-	1622	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	895	1084	1022	895	-	1622	-	-	-	-	-
Mov Cap-2 Maneuver	-	895	-	1022	895	-	-	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	895	1084	1022	895	-	1622	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	895	1084	1022	895	-	1622	-	-	-	-	-
Mov Cap-2 Maneuver	-	895	-	1022	895	-	-	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	1	57	0	131	9	38	80	1
Future Vol, veh/h	0	0	0	9	1	57	0	131	9	38	80	1
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, %	0	0	0	11	0	4	0	3	0	5	4	0
Mvmt Flow	0	0	0	9	1	60	0	138	9	40	84	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	7.6	8.1	8.1
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	13%	32%
Vol Thru, %	94%	100%	1%	67%
Vol Right, %	6%	0%	85%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	0	67	119
LT Vol	0	0	9	38
Through Vol	131	0	1	80
RT Vol	9	0	57	1
Lane Flow Rate	147	0	71	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0	0.082	0.149
Departure Headway (Hd)	4.132	4.586	4.206	4.281
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	859	0	857	829
Service Time	2.203	2.588	2.206	2.353
HCM Lane V/C Ratio	0.171	0	0.083	0.151
HCM Control Delay	8.1	7.6	7.6	8.1
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.6	0	0.3	0.5

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	52	55	228	134	0	0	0	0	83	0	27
Future Vol, veh/h	0	52	55	228	134	0	0	0	0	83	0	27
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	14	5	0	2	0	0	0	0	0	0	11
Mvmt Flow	0	58	62	256	151	0	0	0	0	93	0	30

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	120	0	0	752	783	151
Stage 1	-	-	-	-	-	-	663	663	-
Stage 2	-	-	-	-	-	-	89	120	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.399
Pot Cap-1 Maneuver	0	-	-	1480	-	0	381	328	872
Stage 1	0	-	-	-	-	0	516	462	-
Stage 2	0	-	-	-	-	0	940	800	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1480	-	-	309	0	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	0	-
Stage 1	-	-	-	-	-	-	516	0	-
Stage 2	-	-	-	-	-	-	762	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1480	-	367
HCM Lane V/C Ratio	-	-	0.173	-	0.337
HCM Control Delay (s)	-	-	7.9	0	19.7
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.6	-	1.5

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	11	124	0	0	284	74	79	0	68	0	0	0
Future Vol, veh/h	11	124	0	0	284	74	79	0	68	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	9	11	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	13	143	0	0	326	85	91	0	78	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	411	0	-	-	-	0	538	580	143
Stage 1	-	-	-	-	-	-	169	169	-
Stage 2	-	-	-	-	-	-	369	411	-
Critical Hdwy	4.19	-	-	-	-	-	6.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.5	-
Follow-up Hdwy	2.281	-	-	-	-	-	3.527	4	3.3
Pot Cap-1 Maneuver	1111	-	0	0	-	-	502	428	910
Stage 1	-	-	0	0	-	-	858	763	-
Stage 2	-	-	0	0	-	-	697	598	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1111	-	-	-	-	-	495	0	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	495	0	-
Stage 1	-	-	-	-	-	-	847	0	-
Stage 2	-	-	-	-	-	-	697	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.7	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	627	1111	-	-	-
HCM Lane V/C Ratio	0.269	0.011	-	-	-
HCM Control Delay (s)	12.8	8.3	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	1.1	0	-	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	83	197	2	17	103
Future Vol, veh/h	1	83	197	2	17	103
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	90	90	90	90	90	90
Heavy Vehicles, %	0	4	2	50	41	10
Mvmt Flow	1	92	219	2	19	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	220	0	0	221	0
Stage 1	220	-	-	-	-	-
Stage 2	152	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.51	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.569	-
Pot Cap-1 Maneuver	633	815	-	-	1148	-
Stage 1	821	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	815	-	-	1148	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	812	1148	-
HCM Lane V/C Ratio	-	-	0.115	0.016	-
HCM Control Delay (s)	-	-	10	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	0	0	0
HCM LOS	-	-	-	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0
LT Vol	0	0	0	0
Through Vol	0	0	0	0
RT Vol	0	0	0	0
Lane Flow Rate	0	0	0	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	0	0	0
Service Time	1.934	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0	0
HCM Control Delay	6.9	6.9	6.9	6.9
HCM Lane LOS	N	N	N	N
HCM 95th-tile Q	0	0	0	0

Intersection	
Intersection Delay, s/veh	0
Intersection LOS	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	0	0	0
HCM LOS	-	-	-	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0	0
LT Vol	0	0	0	0
Through Vol	0	0	0	0
RT Vol	0	0	0	0
Lane Flow Rate	0	0	0	0
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	0	0	0
Service Time	1.934	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0	0
HCM Control Delay	6.9	6.9	6.9	6.9
HCM Lane LOS	N	N	N	N
HCM 95th-tile Q	0	0	0	0

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	9	0	207	0	281	8	95	120	1
Future Vol, veh/h	0	0	2	9	0	207	0	281	8	95	120	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	50	78	0	40	0	11	50	18	6	100
Mvmt Flow	0	0	2	10	0	230	0	312	9	106	133	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	13.5	12.8	11.8
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	4%	44%
Vol Thru, %	97%	0%	0%	56%
Vol Right, %	3%	100%	96%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	289	2	216	216
LT Vol	0	0	9	95
Through Vol	281	0	0	120
RT Vol	8	2	207	1
Lane Flow Rate	321	2	240	240
Geometry Grp	1	1	1	1
Degree of Util (X)	0.469	0.003	0.411	0.37
Departure Headway (Hd)	5.258	5.327	6.168	5.554
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	690	670	583	648
Service Time	3.258	3.374	4.199	3.583
HCM Lane V/C Ratio	0.465	0.003	0.412	0.37
HCM Control Delay	12.8	8.4	13.5	11.8
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2.5	0	2	1.7

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	36	113	36	193	0	0	0	0	107	0	27
Future Vol, veh/h	0	36	113	36	193	0	0	0	0	107	0	27
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	28	7	0	31	0	0	0	0	8	0	0
Mvmt Flow	0	48	151	48	257	0	0	0	0	143	0	36

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	199	0	0	477	552	257
Stage 1	-	-	-	-	-	-	353	353	-
Stage 2	-	-	-	-	-	-	124	199	-
Critical Hdwy	-	-	-	4.1	-	-	6.48	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.572	4	3.3
Pot Cap-1 Maneuver	0	-	-	1385	-	0	536	444	787
Stage 1	0	-	-	-	-	0	698	634	-
Stage 2	0	-	-	-	-	0	887	740	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1385	-	-	515	0	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	515	0	-
Stage 1	-	-	-	-	-	-	698	0	-
Stage 2	-	-	-	-	-	-	852	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.2	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1385	-	554
HCM Lane V/C Ratio	-	-	0.035	-	0.323
HCM Control Delay (s)	-	-	7.7	0	14.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	1.4

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	130	0	0	46	34	182	0	251	0	0	0
Future Vol, veh/h	12	130	0	0	46	34	182	0	251	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	26	0	0	42	0	25	0	0	0	0	0
Mvmt Flow	17	183	0	0	65	48	256	0	354	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	113	0	-	-	-	0	306	330	183
Stage 1	-	-	-	-	-	-	217	217	-
Stage 2	-	-	-	-	-	-	89	113	-
Critical Hdwy	4.1	-	-	-	-	-	6.65	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.65	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.65	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.725	4	3.3
Pot Cap-1 Maneuver	1489	-	0	0	-	-	641	592	865
Stage 1	-	-	0	0	-	-	768	727	-
Stage 2	-	-	0	0	-	-	880	806	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1489	-	-	-	-	-	633	0	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	633	0	-
Stage 1	-	-	-	-	-	-	758	0	-
Stage 2	-	-	-	-	-	-	880	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.6	0	27.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	750	1489	-	-	-
HCM Lane V/C Ratio	0.813	0.011	-	-	-
HCM Control Delay (s)	27.1	7.4	0	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	8.7	0	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	111	4	63	389
Future Vol, veh/h	4	25	111	4	63	389
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	88	88	88	88	88	88
Heavy Vehicles, %	75	28	21	25	11	12
Mvmt Flow	5	28	126	5	72	442

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	715	129	0	0	131	0
Stage 1	129	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	7.15	6.48	-	-	4.21	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.552	-	-	2.299	-
Pot Cap-1 Maneuver	307	856	-	-	1400	-
Stage 1	745	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	856	-	-	1400	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1400	-
HCM Lane V/C Ratio	-	-	0.049	0.051	-
HCM Control Delay (s)	-	-	10.6	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	11	11	0	6	121	108	119	61	255	63
Future Vol, veh/h	6	0	11	11	0	6	121	108	119	61	255	63
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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	12	12	0	7	132	117	129	66	277	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	892	953	311	895	923	182	345	0	0	246	0	0
Stage 1	443	443	-	446	446	-	-	-	-	-	-	-
Stage 2	449	510	-	449	477	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	263	259	729	261	270	861	1214	-	-	1320	-	-
Stage 1	594	576	-	591	574	-	-	-	-	-	-	-
Stage 2	589	538	-	589	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	212	729	221	221	861	1214	-	-	1320	-	-
Mov Cap-2 Maneuver	225	212	-	221	221	-	-	-	-	-	-	-
Stage 1	518	540	-	515	501	-	-	-	-	-	-	-
Stage 2	510	469	-	543	522	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	17.8	2.9	1.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1214	-	-	407	300	1320	-	-
HCM Lane V/C Ratio	0.108	-	-	0.045	0.062	0.05	-	-
HCM Control Delay (s)	8.3	0	-	14.3	17.8	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	13	0	6	4	342	142	73	202	2
Future Vol, veh/h	0	0	1	13	0	6	4	342	142	73	202	2
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	1	14	0	7	4	372	154	79	220	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	840	913	221	837	837	449	222	0	0	526	0	0
Stage 1	379	379	-	457	457	-	-	-	-	-	-	-
Stage 2	461	534	-	380	380	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	285	273	819	286	303	610	1347	-	-	1041	-	-
Stage 1	643	615	-	583	568	-	-	-	-	-	-	-
Stage 2	581	524	-	642	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	262	248	819	266	275	610	1347	-	-	1041	-	-
Mov Cap-2 Maneuver	262	248	-	266	275	-	-	-	-	-	-	-
Stage 1	640	561	-	581	566	-	-	-	-	-	-	-
Stage 2	572	522	-	585	561	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	16.9	0.1	2.3
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1347	-	-	819	324	1041	-	-
HCM Lane V/C Ratio	0.003	-	-	0.001	0.064	0.076	-	-
HCM Control Delay (s)	7.7	0	-	9.4	16.9	8.7	0	-
HCM Lane LOS	A	A	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	1	73	0	151	9	207	297	1
Future Vol, veh/h	0	0	0	9	1	73	0	151	9	207	297	1
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, %	0	0	0	11	0	4	0	3	0	5	4	0
Mvmt Flow	0	0	0	9	1	77	0	159	9	218	313	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	8.9	9.1	15.8
HCM LOS	-	A	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	11%	41%
Vol Thru, %	94%	100%	1%	59%
Vol Right, %	6%	0%	88%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	0	83	505
LT Vol	0	0	9	207
Through Vol	151	0	1	297
RT Vol	9	0	73	1
Lane Flow Rate	168	0	87	532
Geometry Grp	1	1	1	1
Degree of Util (X)	0.22	0	0.125	0.661
Departure Headway (Hd)	4.71	5.63	5.149	4.478
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	761	0	694	808
Service Time	2.749	3.696	3.198	2.508
HCM Lane V/C Ratio	0.221	0	0.125	0.658
HCM Control Delay	9.1	8.7	8.9	15.8
HCM Lane LOS	A	N	A	C
HCM 95th-tile Q	0.8	0	0.4	5.1

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	75	201	228	147	0	0	0	0	83	0	30
Future Vol, veh/h	0	75	201	228	147	0	0	0	0	83	0	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	14	5	0	2	0	0	0	0	0	0	11
Mvmt Flow	0	84	226	256	165	0	0	0	0	93	0	34

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	310	0	0	874	987	165
Stage 1	-	-	-	-	-	-	677	677	-
Stage 2	-	-	-	-	-	-	197	310	-
Critical Hdwy	-	-	-	4.1	-	-	6.4	6.5	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.399
Pot Cap-1 Maneuver	0	-	-	1262	-	0	323	249	857
Stage 1	0	-	-	-	-	0	509	455	-
Stage 2	0	-	-	-	-	0	841	663	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1262	-	-	251	0	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	0	-
Stage 1	-	-	-	-	-	-	509	0	-
Stage 2	-	-	-	-	-	-	653	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	5.2	24.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1262	-	309
HCM Lane V/C Ratio	-	-	0.203	-	0.411
HCM Control Delay (s)	-	-	8.6	0	24.5
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.8	-	1.9

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	124	0	0	284	74	92	0	68	0	0	0
Future Vol, veh/h	34	124	0	0	284	74	92	0	68	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	9	11	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	39	143	0	0	326	85	106	0	78	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	411	0	-	-	-	0	590	632	143
Stage 1	-	-	-	-	-	-	221	221	-
Stage 2	-	-	-	-	-	-	369	411	-
Critical Hdwy	4.19	-	-	-	-	-	6.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.5	-
Follow-up Hdwy	2.281	-	-	-	-	-	3.527	4	3.3
Pot Cap-1 Maneuver	1111	-	0	0	-	-	469	400	910
Stage 1	-	-	0	0	-	-	813	724	-
Stage 2	-	-	0	0	-	-	697	598	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1111	-	-	-	-	-	451	0	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	0	-
Stage 1	-	-	-	-	-	-	782	0	-
Stage 2	-	-	-	-	-	-	697	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.8	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	574	1111	-	-	-
HCM Lane V/C Ratio	0.32	0.035	-	-	-
HCM Control Delay (s)	14.2	8.4	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	1.4	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	83	396	2	17	121
Future Vol, veh/h	1	83	396	2	17	121
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	90	90	90	90	90	90
Heavy Vehicles, %	0	4	2	50	41	10
Mvmt Flow	1	92	440	2	19	134

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	613	441	0	0	442	0
Stage 1	441	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.51	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.569	-
Pot Cap-1 Maneuver	459	612	-	-	939	-
Stage 1	653	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	449	612	-	-	939	-
Mov Cap-2 Maneuver	449	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	609	939	-
HCM Lane V/C Ratio	-	-	0.153	0.02	-
HCM Control Delay (s)	-	-	12	8.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	0	121	119	0	61	11	263	11	6	125	6
Future Vol, veh/h	63	0	121	119	0	61	11	263	11	6	125	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	68	0	132	129	0	66	12	286	12	7	136	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	503	476	140	536	473	292	143	0	0	298	0	0
Stage 1	154	154	-	316	316	-	-	-	-	-	-	-
Stage 2	349	322	-	220	157	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	479	488	908	455	490	747	1440	-	-	1263	-	-
Stage 1	848	770	-	695	655	-	-	-	-	-	-	-
Stage 2	667	651	-	782	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	431	480	908	384	482	747	1440	-	-	1263	-	-
Mov Cap-2 Maneuver	431	480	-	384	482	-	-	-	-	-	-	-
Stage 1	840	765	-	688	648	-	-	-	-	-	-	-
Stage 2	602	644	-	665	763	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	18.5	0.3	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1440	-	-	658	460	1263	-	-
HCM Lane V/C Ratio	0.008	-	-	0.304	0.425	0.005	-	-
HCM Control Delay (s)	7.5	0	-	12.8	18.5	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	2.1	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	142	0	73	1	210	13	6	359	0
Future Vol, veh/h	2	0	4	142	0	73	1	210	13	6	359	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	4	154	0	79	1	228	14	7	390	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	648	390	643	641	235	390	0	0	242	0	0
Stage 1	404	404	-	237	237	-	-	-	-	-	-	-
Stage 2	277	244	-	406	404	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	364	389	658	386	393	804	1169	-	-	1324	-	-
Stage 1	623	599	-	766	709	-	-	-	-	-	-	-
Stage 2	729	704	-	622	599	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	326	386	658	381	390	804	1169	-	-	1324	-	-
Mov Cap-2 Maneuver	326	386	-	381	390	-	-	-	-	-	-	-
Stage 1	622	595	-	765	708	-	-	-	-	-	-	-
Stage 2	656	703	-	614	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	20.4	0	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1169	-	-	491	464	1324	-	-
HCM Lane V/C Ratio	0.001	-	-	0.013	0.504	0.005	-	-
HCM Control Delay (s)	8.1	0	-	12.4	20.4	7.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	2.8	0	-	-

APPENDIX E: TRAFFIC PROJECTION MODEL

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Discovery Solar Storage Project
Traffic Projection Model
07/22/2024

INTID	NAME	MOVEMENT	3	4	5	6	7	8	9	10	11	12	13	14
			2024 Existing AM Traffic Volumes (6/4/24)	2024 Existing PM Traffic Volumes (6/4/24)	2026 Grown AM Peak Hour Traffic Volumes (Unadjusted)	Mojave Microp Mill Background Project - AM Trips	Kern Organic Renewables Background Project - AM Trips	Total Background AM Trips	2026 No Build AM Traffic Volumes	2026 Grown PM Peak Hour Traffic Volumes (Unadjusted)	Mojave Microp Mill Background Project - PM Trips	Kern Organic Renewables Background Project - PM Trips	Total Background PM Trips	2026 No Build PM Traffic Volumes
		16												
1	Tehachapi Willow Springs Road & Backus Road	4 NBL	0	0	0			0	0	0			0	0
		5 NBT	64	131	64			0	64	131			0	131
		6 NBR	8	9	8			0	8	9			0	9
		7 SBL	79	38	79			0	79	38			0	38
		8 SBT	100	80	100			0	100	80			0	80
		9 SBR	1	1	1			0	1	1			0	1
		10 EBL	0	0	0			0	0	0			0	0
		11 EBT	0	0	0			0	0	0			0	0
		12 EBR	2	0	2			0	2	0			0	0
		13 WBL	9	9	9			0	9	9			0	9
		14 WBT	0	1	0			0	0	1			0	1
		15 WBR	38	57	38			0	38	57			0	57
					0			0	0	0			0	0
2	SR 14 Southbound On-Ramp/SR 14 Southbound Off-Ramp & Backus Road	25			0			0	0	0			0	0
		7 SBL	12	11	12	95	0	95	107	11	72	0	72	83
		8 SBT	0	0	0			0	0	0			0	0
		9 SBR	4	27	4			0	4	27			0	27
		11 EBT	25	28	25	8	0	8	33	28	24	0	24	52
		12 EBR	100	55	100			0	100	55			0	55
		13 WBL	4	7	4	32	0	32	36	7	73	148	221	228
		14 WBT	45	90	45	2	0	2	47	90	44	0	44	134
					0			0	0	0			0	0
3	SR 14 Northbound Off-Ramp/SR 14 Northbound On-Ramp & Backus Road	34			0			0	0	0			0	0
		4 NBL	36	79	36			0	36	79			0	79
		5 NBT	0	0	0			0	0	0			0	0
		6 NBR	8	3	8	95	148	243	251	3	65	0	65	68
		10 EBL	9	11	9			0	9	11			0	11
		11 EBT	27	28	27	103	0	103	130	28	96	0	96	124
		14 WBT	12	19	12	34	0	34	46	19	117	148	265	284
		15 WBR	2	6	2	32	0	32	34	6	68	0	68	74
					0			0	0	0			0	0
4	Tehachapi Willow Springs Road & Oak Creeek Road	42			0			0	0	0			0	0
		5 NBT	93	197	93			0	93	197			0	197
		6 NBR	4	2	4			0	4	2			0	2
		7 SBL	63	17	63			0	63	17			0	17
		8 SBT	190	103	190			0	190	103			0	103
		13 WBL	4	1	4			0	4	1			0	1
		15 WBR	25	83	25			0	25	83			0	83
					0			0	0	0			0	0
5	Tehachapi Willow Springs Road & Site E Primary Driveway/Sites A+B+C Primary Driveway	56			0			0	0	0			0	0
		4 NBL			0			0	0	0			0	0
		5 NBT	102	188	102			0	102	188			0	188
		6 NBR			0			0	0	0			0	0
		7 SBL			0			0	0	0			0	0
		8 SBT	180	119	180			0	180	119			0	119
		9 SBR			0			0	0	0			0	0
		10 EBL			0			0	0	0			0	0
		11 EBT			0			0	0	0			0	0
		12 EBR			0			0	0	0			0	0
		13 WBL			0			0	0	0			0	0
		14 WBT			0			0	0	0			0	0
		15 WBR			0			0	0	0			0	0
					0			0	0	0			0	0
6	Tehachapi Willow Springs Road & Site D Primary Driveways	70			0			0	0	0			0	0
		4 NBL			0			0	0	0			0	0
		5 NBT	102	188	102			0	102	188			0	188
		6 NBR			0			0	0	0			0	0
		7 SBL			0			0	0	0			0	0
		8 SBT	180	119	180			0	180	119			0	119
		9 SBR			0			0	0	0			0	0
		10 EBL			0			0	0	0			0	0
		11 EBT			0			0	0	0			0	0
		12 EBR			0			0	0	0			0	0
		13 WBL			0			0	0	0			0	0
		14 WBT			0			0	0	0			0	0
		15 WBR			0			0	0	0			0	0

Discovery Solar Storage Project
Traffic Projection Model
07/22/2024

INTID	NAME	MOVEMENT	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
			Entering Distribution Site A/B/C	Exiting Distribution Site A/B/C	Entering Distribution Site E	Exiting Distribution Site E	Entering Distribution Site D (North)	Exiting Distribution Site D (North)	Entering Distribution Site D (South)	Exiting Distribution Site D (South)	Site A/B/C AM Trips	Site E AM Trips	Site D (North) AM Trips	Site D (South) AM Trips	AM Site Trips Balancing	Total AM Site Generated Trips	Site A/B/C PM Trips	Site E PM Trips	Site D (North) PM Trips	Site D (South) PM Trips	PM Site Trips Balancing	Total PM Site Generated Trips	Existing + Project AM Traffic Volumes	Existing + Project PM Traffic Volumes	2026 Build AM Traffic Volumes	2026 Build PM Traffic Volumes
		16																								
1	Tehachapi Willow Springs Road & Backus Road	4 NBL									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		5 NBT	37%		37%		37%		37%		67	68	80	2		217	6	6	7	1		20	281	151	281	151
		6 NBR									0	0	0	0		0	0	0	0	0		0	8	9	8	9
		7 SBL		29%		29%		29%		29%	5	5	6	0		16	52	53	62	2		169	95	207	95	207
		8 SBT		37%		37%		37%		37%	6	6	7	1		20	67	68	80	2		217	120	297	120	297
		9 SBR									0	0	0	0		0	0	0	0	0		0	1	1	1	1
		10 EBL									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		11 EBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		12 EBR									0	0	0	0		0	0	0	0	0		0	2	0	2	0
		13 WBL									0	0	0	0		0	0	0	0	0		0	9	9	9	9
		14 WBT									0	0	0	0		0	0	0	0	0		0	0	1	0	1
		15 WBR	29%		29%		29%		29%		52	53	62	2		169	5	5	6	0		16	207	73	207	73
											0	0	0	0		0	0	0	0	0		0	0	0	0	0
2	SR 14 Southbound On-Ramp/SR 14 Southbound Off-Ramp & Backus Road	25									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		7 SBL									0	0	0	0		0	0	0	0	0		0	12	11	107	83
		8 SBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		9 SBR	4%		4%		4%		4%		7	7	9	0		23	1	1	1	0		3	27	30	27	30
		11 EBT		4%		4%		4%		4%	1	1	1	0		3	7	7	9	0		23	28	51	36	75
		12 EBR		25%		25%		25%		25%	4	4	5	0		13	45	46	53	2		146	113	201	113	201
		13 WBL									0	0	0	0		0	0	0	0	0		0	4	7	36	228
		14 WBT	25%		25%		25%		25%		45	46	53	2		146	4	4	5	0		13	191	103	193	147
											0	0	0	0		0	0	0	0	0		0	0	0	0	0
3	SR 14 Northbound Off-Ramp/SR 14 Northbound On-Ramp & Backus Road	34									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		4 NBL	25%		25%		25%		25%		45	46	53	2		146	4	4	5	0		13	182	92	182	92
		5 NBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		6 NBR									0	0	0	0		0	0	0	0	0		0	8	3	251	68
		10 EBL		4%		4%		4%		4%	1	1	1	0		3	7	7	9	0		23	12	34	12	34
		11 EBT									0	0	0	0		0	0	0	0	0		0	27	28	130	124
		14 WBT									0	0	0	0		0	0	0	0	0		0	12	19	46	284
		15 WBR									0	0	0	0		0	0	0	0	0		0	2	6	34	74
											0	0	0	0		0	0	0	0	0		0	0	0	0	0
4	Tehachapi Willow Springs Road & Oak Creek Road	42									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		5 NBT		34%		34%		34%		34%	6	6	6	0		18	61	63	73	2		199	111	396	111	396
		6 NBR									0	0	0	0		0	0	0	0	0		0	4	2	4	2
		7 SBL									0	0	0	0		0	0	0	0	0		0	63	17	63	17
		8 SBT	34%		34%		34%		34%		61	63	73	2		199	6	6	6	0		18	389	121	389	121
		13 WBL									0	0	0	0		0	0	0	0	0		0	4	1	4	1
		15 WBR									0	0	0	0		0	0	0	0	0		0	25	83	25	83
											0	0	0	0		0	0	0	0	0		0	0	0	0	0
5	Tehachapi Willow Springs Road & Site E Primary Driveway/Sites A+B+C Primary Driveway	56									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		4 NBL			66%						0	121	0	0		121	0	11	0	0		11	121	11	121	11
		5 NBT						34%		34%	0	0	6	0		6	0	0	73	2		75	108	263	108	263
		6 NBR	66%								119	0	0	0		119	11	0	0	0		11	119	11	119	11
		7 SBL	34%								61	0	0	0		61	6	0	0	0		6	61	6	61	6
		8 SBT					34%		34%		0	0	73	2		75	0	0	6	0		6	255	125	255	125
		9 SBR			34%						0	63	0	0		63	0	6	0	0		6	63	6	63	6
		10 EBL				34%					0	6	0	0		6	0	63	0	0		63	6	63	6	63
		11 EBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		12 EBR				66%					0	11	0	0		11	0	121	0	0		121	11	121	11	121
		13 WBL		66%							11	0	0	0		11	119	0	0	0		119	11	119	11	119
		14 WBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		15 WBR		34%							6	0	0	0		6	61	0	0	0		61	6	61	6	61
											0	0	0	0		0	0	0	0	0		0	0	0	0	0
6	Tehachapi Willow Springs Road & Site D Primary Driveways	70									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		4 NBL							66%		0	0	0	4		4	0	0	0	1		1	4	1	4	1
		5 NBT	66%		66%						119	121	0	0		240	11	11	0	0		22	342	210	342	210
		6 NBR					66%				0	0	142	0		142	0	0	13	0		13	142	13	142	13
		7 SBL					34%				0	0	73	0		73	0	0	6	0		6	73	6	73	6
		8 SBT		66%		66%					11	11	0	0		22	119	121	0	0		240	202	359	202	359
		9 SBR							34%		0	0	0	2		2	0	0	0	0		0	2	0	2	0
		10 EBL								34%	0	0	0	0		0	0	0	0	2		2	0	2	0	2
		11 EBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		12 EBR								66%	0	0	0	1		1	0	0	0	4		4	1	4	1	4
		13 WBL						66%			0	0	13	0		13	0	0	142	0		142	13	142	13	142
		14 WBT									0	0	0	0		0	0	0	0	0		0	0	0	0	0
		15 WBR						34%			0	0	6	0		6	0	0	73	0		73	6	73	6	73

CUMULATIVE PROJECTS LIST

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
1-MILE RADIUS SOLAR PROJECTS								
1	AV Apollo Solar	Southeast corner of Backus Road and 100th Street West, Northeast corner of Backus Road and 100th Street West	60 MW solar facility	CUP, GPA	CUP 37, Map 214; CUP 38, Map 214; CUP 39, Map 214; CUP 41, Map 214; GPA 5, Map 214	346-022-03; multiple	493.5 acres	Approved
2	Windhub Solar Project	6 miles west of SR-14, 5 miles south of SR-58, east of 90th St West	80 MW, 320 MW(h) solar facility	CUP	CUP 17, Map 197; CUP 18, Map 197	237-350-02; multiple	307.50	Partially Complete
1-MILE RADIUS NON-SOLAR PROJECTS								
3	NB + C	11253 Tehachapi-Willow Springs Rd, Tehachapi, CA	Satellite ground station	CUP	CUP	474-052-206	9.55	In Review
4	Windstar Upper and Lower BESS	12490 90th Street West, Mojave, CA	102 MW, 480 MW(h) energy storage facility	BESS for existing wind farm	CUP, Map 197 & 198	237-054-20; 237-211-17	274.00	In Review
5	Big Beau Solar Project	Southeast portion of Kern County approximately 12 miles southwest of SR-58 and approximately 9 miles east of SR-14	128 MW solar facility and up to 60 MW energy storage capacity	GPA, ZCC, CUP	GPA 4, Map 215; ZCC 13, Map 215; CUP 13, Map 215; CUP 14, Map 215; CUP 15, Map 215; SPA 32, Map 232; ZCC 44, Map 232; CUP 41, Map 232; CUP 42; Map 232; CUP 43, Map 232	474-131-03; multiple	2562.03	Complete
6-MILE RADIUS SOLAR PROJECTS								
6	Galaxy Solar PV & Storage Project	Appx. 6 miles southeast of Mojave, 8 miles northeast of Rosamond, 8 miles northwest of Edwards Air Force Base	600 MW solar facility and up to 4 GWh of energy storage capacity	GPA, ZCC, CUP, ZV, VTPM	GPA No. 7, Map 212; ZCC No. 5, Map 195; ZCC No. 57, Map 197; ZCC No. 4, Map 212; ZCC No. 5, Map 212; CUP No. 4, Map 195; CUP No. 5, Map 195; CUP No. 24, Map 197; CUP No. 7, Map 212; ZV No. 1, Map 195; ZV No. 2, Map 212; ZV No. 21, Map 197; GPA No. 5, Map 195; GPA No. 6, Map 212; VTPM (Multiple)	237-332-18; multiple	3400.00	Processing
7	Organics Energy Solar	N/A	N/A	SPA, CUP, PD	SPA 27, Map 213; CUP 69, Map 213; PD 4, Map 213	429-101-36; multiple	119.64	Processing
8	Bullhead Solar	9678 Dawn Road, Rosamond, CA	270 MW, 1080 MW(h) solar	GPA, ZCC, CUP	GPA, ZCC, CUP; Map 214, 215, 231, 232	315-080-36;	1343.00	Approved

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
			facility			multiple		
9	Bullhead II Solar	Northeast corner of Tehachapi Willow Springs Road and Hamilton Road	50 MW, 200 MW(h) storage facility	N/A	N/A	346-032-55; multiple	544.00	Processing
10	Sanborn Solar Project	South of SR 58 and east of SR 14	300 MW solar facility and up to 3 gigawatt hours (GWh) of energy storage capacity	SPA, ZCC, CUP	SPA 30, Map 196; ZCC 56, Map 196; ZCC 2, Map 212; ZCC 59, Map 213; CUP 45, Map 196; CUP 5, Map 212; CUP 66, Map 213	428-030-02; multiple	2006.00	In Construction
11	Mid-American Gunite dba MAG Energy	N/A	1,477 kW Commercial Solar	CUP	CUP, Map 213	429-102-14	156.36	Applied
12	Enterprise Solar Storage Project	Western edge of the Antelope Valley, Appx. 2 miles south of Mojave, 2 miles southwest of California City, 1 mile north of Edwards Air Force Base, and eight miles north of Rosamond	600 MW solar facility and up to 1000 MW battery storge	GPA, ZCC, CUP	GPA 4, ZCC 3, CUP 2, Map 195; GPA 34, ZCC 60, CUP 62, Map 196; GPA 3, GPA 4, SPA 5, ZCC 3, CUP 6, Map 212; CUP 1, Map 196-20	427-100-24; multiple	2200.00	In Compliance
13	Sanborn 2.0 Solar Project	Appx. 17 miles southeast of Tehachapi, 1 mile south of Mojave, and 10 miles north of Rosamond.	1000 MW, 4000 MW(h) solar facility	CUP	CUP 60 and CUP 61, Map 196	427-030-33; multiple	1200.00	In Construction
14	Edwards Air Force Base Solar	Northwest corner of Edwards Air Force Base, at the intersection of Lone Butte Road and East Trotter Avenue	600 MW solar facility on Edwards Air Force Base	Franchise Agreement	Franchise Agreement, Map 231	430-011-01; multiple	12754.00	Approved
6-MILE RADIUS NON-SOLAR PROJECTS								
15	Pacific Steel Mojave Micro Mill	506 Sopp Rd, Mojave, CA	Steel micro mill manufacturing facility	GPA, ZCC, PD, ZV, CUP	CUP 71, Map 213; CUP 72, MAP 213; GPA 3, Map 213; PD 3, Map 213; ZCC 62, Map 213; ZV 24, Map 213; ZV 25, Map 213	431-010-024; multiple	174.00	In construction
16	Private Developer	2000 Inyo St, Mojave, CA	Residential	TPM	TPM to divide a 22,611 sf (net) parcel of record into an 8,514 sf	236-192-019; 236-	0.52	Applied

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
					(net) parcel and a 14,097 sf (net) parcel for residential use	192-027		
17	NVH Mojave, LLC	16825 Highway 14, Mojave, CA	N/A	LLA	LLA 43-22 proposing an adjustment of lot lines resulting in a 3.64 ac parcel	236-060-026, 236-060-349	3.64	Processing
18	Western Natural Resources	East side of SR 14, south of SR 58	N/A	LLA	LLA 8-23 proposing an adjustment of lot lines resulting in a 79.02 ac parcel and a 198.17 ac parcel	427-020-177; multiple	198.17	In Review
19	High Desert Estates, Inc.	N/A	N/A	TM	TTR 6545	236-080-081; multiple	40.00	Applied
20	Private Developer	East side of 35th Street West between Favorito Avenue and Beaudette Avenue	N/A	LLA	LLA 10-24 proposing an adjustment of lot lines to combine two parcels resulting in a 20.54-acre (gross) parcel	471-082-016; 471-082-024	20.54	In Review
21	Airstreams Renewables, Inc. by Scott Quintana, LAV Pinnacle Engineering.	N/A	Modification - Dormitory Bldg Veterans Training Facility	PD	PD 2, Map 167	224-120-14	N/A	Applied
22	Kern County Planning and Natural Resources	435 Panama Rd, Bakersfield, CA	Kern County Housing Element Implementation 2022	ZCC	ZCC 20, Map 196	236-360-186	0.92	Approved
23	Kern County Planning and Natural Resources	435 Panama Rd, Bakersfield, CA	Kern County Housing Element Implementation 2022	ZCC	ZCC 159, Map 231	252-161-492	2.51	Approved
24	Kern County Planning and Natural Resources	435 Panama Rd, Bakersfield, CA	Kern County Housing Element Implementation 2022	ZCC	ZCC 65, Map 213	430-030-106	6.97	Approved
25	Kern County Public Works Department	N/A	Expand landfill operations	GPA, ZCC, CUP	GPA from 8.5 to 3.4 and 3.4.1; ZCC from A-1 to A; CUP Mod (CUP 28, Map 196, CUP 7, Map 213)	428-181-044; multiple	22.23	Applied
26	RenuEnergy Inc	N/A	Unspecified solar facility	CUP	CUP for commercial solar	427-152-07; multiple	45.00	Applied
27	Antelope Valley	15764 Sierra Hy,	Building	PD	Modification to PD 8 Map 196-17	236-251-	0.7	Applied

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
	Engineering	Mojave, CA	expansion		to allow for building expansion	013, 236-251-112		
28	Idaho Asphalt Supply	1673 Purdy Ave, Mojave	Addition of rail spur and roadway for renewable diesel railcar to the transloading area.	PD	Modification to PD Plan #14, Map 196	427-020-42	N/A	In Review
SOLAR PROJECTS WITHIN AIR BASIN								
29	AVEP Solar Project (Chaparral, Rabbitbrush and Tumbleweed Solar)	South of Dawn Road, west of 95th Street West, north Avenue A, and east of 130th Street West	375 MW solar facility	ZCC, CUP, SPA	ZCC 45, Map 232; CUP 48, Map 232; SPA 1, Map 231-18; ZCC 3, Map 231-18; SPA 2, Map 231-18; SPA 25, Map 232; SPA 27, Map 232; ZCC 40, Map 232; ZCC 41, Map 232; CUP 33, CUP 34, CUP 35, CUP 36, Map 232; SPA 26, Map 232; SPA 28, Map 232	359-183-02; multiple	2052.15	In Construction
30	Jade Energy Storage	N/A	100 MW, 400 MW(h) solar storage facility	ZCC, CUP	ZCC, CUP, Map 233	261-133-22; multiple	9.00	Processing
31	Pappas Solar Project by Radiant BMT, LLC	N/A	Unspecified solar facility	CUP	CUP 6, Map 134	181-321-04 & -05	37.00	Processing
32	Graff Solar	Southeast corner of Inyokern Road and Saguaro Street	N/A	GPA, ZCC, CUP	GPA# 4 and 5; CUP# 7, 8, 9; ZCC# 14 Map 47-28	352-201-49; multiple	80.00	Processing
33	Euismod Energy Storage Project	Northwest corner of Rosamond Blvd and 170th Street W	1,175 MW, 9,400 MW(h) energy storage facility	N/A	N/A	261-104-10; multiple	119.00	Processing
34	Raceway 2.0	Western extent of the Mojave Desert near Rosamond, between Rosamond Boulevard and Avenue A, and between 70th Street West and 90th Street West	291 MW solar renewable electrical energy and/or energy storage capacity	SPA, ZCC, CUP	SPA 33, 34, 35, 36, 37, 38, 39, Map 231; ZCC 154, 155, 156, Map 231; CUP 116, CUP 117, CUP 118, CUP 119, Map 231; CUP 4, SPA 3, Map 231-20; SPA 5, ZCC 3, CUP 3, SPA 7, ZCC 4, SPA 6, CUP 4, Map 231-21; SPA 5, ZCC 3, CUP 7, SPA 6, Map 231-28	374-011-04; multiple	1330.00	Near Complete

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
35	Gaskell West (2016)	South of Holiday Ave, west of 225th St, north of Avenue A	125 MW solar facility	CUP	CUP 1, Map 234-25; CUP 3, Map 234-26; CUP 4, Map 234-26; CUP 1, Map 234-27; CUP 3, Map 234; CUP 2, Map 234-27; CUP 1, Map 234-34; CUP 5, Map 234; CUP 3, Map 234-34	254-551-08; multiple	1463.00	In Construction
36	RB Inyokern Solar Project	East of North Brown Road and Inyokern Road intersection	Unspecified solar facility	CUP, SPA	CUP 23, Map 47; CUP 27, Map 47; SPA 4, Map 47	352-085-05; multiple	170.00	In Construction
37	Rosamond CSD Solar	South of Rosamond Boulevard to the north, east of 90th Street West, North of West Avenue A, east of 170th Street West	Unspecified solar project	CUP	CUP 36, Map 230	261-120-05; multiple	247.58	Approved
38	Bellefield Solar Project	Altus Ave and SR-58	750 MW solar facility and (up to) 2,000 MW-hour energy storage system	GPA, ZCC, CUP, SPA	GPA 2, Map 195; ZCC 2, Map 195; CUP 1, Map 195; ZCC 57, Map 196; CUP 57, Map 196; GPA 3, Map 195; SPA 31, Map 196	428-010-11; multiple	8375.90	In Construction
39	Rosamond South Solar (Golden Fields Solar)	Rosamond Blvd & 90th Street West	245 MW, 980 MW(h) solar facility	SPA, ZCC, CUP	SPA 40, Map 231; SPA 33, Map 232; SPA 31, Map 232; ZCC 157, Map 231; ZCC 43, Map 232; ZCC 18, Map 233; CUP 120, Map 231; CUP 40, Map 232; CUP 46, Map 232; CUP 44, Map 232; CUP 16, Map 233	261-120-05; multiple	1302.00	In Construction
40	Aratina Solar Project Site	SR-58 between Gephart Rd and San Bernadino County line	600 MW, 2400 MW(h) solar facility	ZCC, CUP, GPA	ZCC 6, CUP 16, CUP 17, GPA 6, MAP 192, GPA 2, MAP 192-35, ZCC 3, CUP 3, GPA 3, MAP 208-5, ZCC 6, CUP 7, GPA 3, MAP 208-6, ZCC 1, CUP 1, GPA 1, MAP 209-1, CUP 1, GPA 1, MAP 209-2	244-010-19; multiple	2554.00	In Construction
41	Gettysburg Solar	Southwest corner of Rosamond and 70th Street West	30 MW, 120 MW(h) solar facility	SPA, ZCC, CUP	SPA 8, Map 231-21; ZCC 5, Map 231-21; CUP 5, Map 231-21; CUP 6, Map 231-21; SPA 9, Map 231-21	374-011-06; multiple	158.00	In Compliance
42	Eland 1 Solar	South of Munsey Road,	500 MW solar	GPA, ZCC,	GPA 9, Map 152; GPA 1, Map	469-030-01;	61.31	In Construction

No.	Project Name/Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Approx. Acreage	Project Status
		east and west of Neuralia Road, east of SR 14, and north and south of Phillips Road	facility	CUP	152-28; ZCC 11, Map 152; ZCC 12, Map 152; ZCC 13, Map 152; ZCC 1, Map 152-28; CUP 23, Map 152; CUP 24, Map 152; CUP 25, Map 152; CUP 26, Map 152; CUP 3, Map 152-28	multiple		
43	Kudu Solar Project	Unincorporated Kern County and City of California City	500 MW solar facility and 600 MW energy storage system	ZCC, CUP, GPA	ZCC 14, Map 152; CUP 28, Map 152; GPA 10, Map 152	470-020-19; multiple	1954.94	In Construction

Appendix L
Water Supply

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Appendix L1
Water Supply Assessment

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Water Supply Assessment

Discovery Solar PV and Storage Project
Kern County, California

September 2025

Prepared for

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Attachments

Attachment 1. RMR Will-Serve Letter
Attachment 2. MPUD Will-Serve Letter

Acronyms and Abbreviations

AF	acre-feet
AFY	acre-feet per year
Applicant	Discovery Solar PV and Storage, LLC
AVEK	Antelope Valley – East Kern Water Agency
AVGB	Antelope Valley Groundwater Basin
CEQA	California Environmental Quality Act
DWR	California Department of Water Resources
EIR	Environmental Impact Report
FVGB	Fremont Valley Groundwater Basin
gen-tie	generation-tie
GSP	groundwater sustainability plan
IRWMP	Integrated Regional Water Management Plan
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
MW	megawatts
MPUD	Mojave Public Utilities District
Project	Discovery Solar PV and Storage Project
PV	photovoltaic
RMR	RMR Water Trucks and Rental Equipment, Inc.
SB	Senate Bill
SCE	Southern California Edison
SGMA	Sustainable Groundwater Management Act
SR	State Route
SWP	State Water Project
UPRR	Union Pacific Railroad
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

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1.0 INTRODUCTION

Tetra Tech was retained by Discovery Solar PV and Storage, LLC (Applicant) to conduct a water supply assessment for the proposed Discovery Solar PV and Storage Project (Project). This Water Supply Assessment (WSA) presents the methodology, results, and recommendations in accordance with Senate Bill (SB) 610 and SB 221, adopted in 2001, amending the California Water Code to require that certain types of development projects provide a WSA. The detailed assessment of water supply availability and reliability discussed in this report is intended to provide local decisionmakers with key water supply information prior to a decision on Project approval. A WSA must provide (1) a description of the source(s) of water supply that will be used to meet the water demands of the proposed project over a 20-year planning horizon, and (2) an assessment of how changing climatic conditions, particularly long-range drought potential, could affect the area if a project is implemented.

This WSA has been prepared as required under the California Water Code, amended by SB 610, to provide an examination of the availability of water supply source(s) to meet the expected water demands of the Project. This review considers conditions under multiple scenarios (a) a normal year (the "no drought" scenario), (b) a single-dry-year (the "limited drought" scenario), and (c) multiple dry-years (the "extended drought" scenario), over a 20-year planning horizon. The WSA accounts for, not only the Project's water demand, but also all other existing and planned future uses of the water supply, to the extent information is available.

2.0 PROJECT DESCRIPTION AND LOCATION

The Project includes development of a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 1,400 megawatts (MW) of renewable electrical energy with up to 8 gigawatt-hours of energy storage capacity (approximately 1,000 MW) on an approximately 7,700-acre Project site in an unincorporated area of southeastern Kern County, California (Figure 1). PV solar panels, a power collection system, including medium-voltage lines that connect the solar facilities, inverters, a switchyard, foundations, and transformers will be installed onsite. Associated Project infrastructure includes an operations and maintenance facility, telecommunication facilities, energy storage system(s), up to three onsite collector substations, interconnection and transmission systems, and temporary laydown yards. The Project may be constructed in multiple phases.

The Project will interconnect to the existing Windhub Substation, which is owned and operated by Southern California Edison (SCE). The interconnection will be via a newly constructed 230-kilovolt (kV) generation tie line (gen-tie) that will extend north from the Project site towards the Windhub Substation from on-site collector substations. A portion of the Project 230-kV gen-tie would be co-located within an existing gen-tie corridor (controlled by the Applicant and/or its affiliates). A high-voltage switchyard located immediately north of the Union Pacific Railroad (UPRR) rail line will also be constructed.

The Project is located in an unincorporated area in southeastern Kern County, on generally undeveloped and privately owned land, along the northern edge of the Antelope Valley. The Project site is located approximately 6 miles southwest of the unincorporated community of Mojave, approximately 9 miles southeast of the city of Tehachapi, and approximately 8 miles northwest of the

unincorporated community of Rosamond. State Route (SR)-58 is north of the Project site, SR-14 is east of the Project site, and Tehachapi Willow-Springs Road runs between the Project site's boundaries (Figure 1). A network of existing named and unnamed dirt roads traverses the Project site. While the Los Angeles Department of Water and Power (LADWP) aqueduct roughly bisects the Project site, it is not included within the Project site (Figures 2 and 3). On-site, adjacent, and nearby land uses include renewable energy development, rural residential development, livestock grazing, heavy industrial and mining uses, and undeveloped lands. Elevations across the Project site are relatively flat, ranging from approximately 2,520 to 2,750 feet above mean sea level. The Project site is located within the U.S. Geological Survey (USGS) *Monolith, Willow Springs,* and *Soledad Mountain* 7.5-Minute Topographic Quadrangle Maps.

During construction of the proposed Project, water will be needed for normal construction-related uses, including (but not necessarily limited to) dust suppression, soil compaction, and grading. Dust-control water may be used for ingress and egress of onsite construction vehicle equipment traffic and other construction purposes. A sanitary water supply would not be required during construction, because restroom facilities would be provided by portable units to be serviced by licensed providers.

The overall construction water usage during the construction period is expected to be approximately 1,266 acre-feet (AF) over 34 months. The primary source of water used during construction and operations would be from two proposed wells (or any potential existing onsite wells) located on the Project site. Supplemental water may be sourced from RMR Water Trucks and Rental Equipment, Inc. (RMR) and Mojave Public Utilities District (MPUD). All water sourced for the Project would be derived from the Fremont Valley Groundwater Basin (FVGB) or potentially from supplemental, imported water through MPUD. Water demand during construction is expected to be the same if the Project is constructed during a year with normal precipitation, a year with less-than-average precipitation, or a multiyear period of less-than-average precipitation.

During Project operations and maintenance, it is anticipated that water would be used for solar panel washing, equipment washing, and other miscellaneous water uses including operations and maintenance building use. If an operations and maintenance facility is constructed, permanent restroom facilities with septic tanks and/or portable toilets would be used for sanitary purposes and a permanent water source in the form of trucked water, well water, or bottled water would be provided for staff (see Figure 4 for the locations of all known prospective Project well sites). The primary source of water used during operations would be from two proposed wells (or any potential existing onsite wells) located on the Project site. Supplemental water may be sourced from RMR and MPUD (see Attachments 1 and 2). On-site water resources would also include a number of aboveground, 10,000-30,000 gallon fire protection tanks, which would be placed at designated locations throughout the Project site, including near battery energy storage facility locations.

Panel washing would require approximately 15 to 30 days to complete per wash cycle. Water consumption is expected to be approximately 0.28 gallon per square yard of panel, based on other similar operations. Although PV panel washing is expected to occur once per year, it is possible the panels may need to be washed up to twice a year based on site conditions. Assuming one or two solar panel wash cycle per year plus typical operations and maintenance activities, the annual water usage

is expected to be approximately 20 AF of water. This amount includes the water necessary for Project operations, fire suppression, and site maintenance.

3.0 ENVIRONMENTAL AND REGULATORY SETTING

3.1 Environmental Setting

The Project site is situated in the far western portion of the Mojave Desert Geomorphic Province, just to the southeast of the Sierra Nevada Geomorphic Province (CGS 2002). Locally, the Project straddles a subtle divide between the Antelope Valley (extending to the south and west) and the Fremont Valley (extending to the northeast). The Tehachapi Mountains are located to the northwest of the Project site and the only significant watershed in the vicinity (Oak Creek) originates in these mountains and discharges through the Project site. The Fremont Valley Groundwater Basin (#06-46) and the Antelope Valley Groundwater Basin (AVGB) (#06-44), both of which are low priority basins under the Sustainable Groundwater Management Act, underlie portions of the Project site (California Department of Water Resources [DWR] 2004), as shown on Figure 4.

3.2 WSA Applicability

California Water Code Section 10910(a) requires that a WSA be prepared for a "project" as defined in Section 10912. According to California Water Code Section 10912(a)(5), the term "project" applies whenever a proposed industrial facility, manufacturing or processing plant, or an industrial park is planned that will include any of the following:

- House more than 1,000 persons,
- Occupy more than 40 acres of land, or
- Include more than 650,000 square feet of floor area.

Because the Project site is approximately 7,700 acres, it is classified as a "project" by California Water Code Section 10912. In addition, the California Water Code (Section 10910[a]) only requires that a WSA is prepared for "projects" (as defined above) if one of the following is expected to be prepared for California Environmental Quality Act (CEQA) compliance:

- An environmental impact report,
- Negative declaration, or
- Mitigated negative declaration.

The Kern County Planning and Natural Resources Department—the CEQA Lead Agency—is preparing an Environmental Impact Report (EIR) for the Project. Thus, a WSA is required because it is both defined as a "project" and will be reviewed in an EIR.

3.3 Public Water Supply

Pursuant to California Water Code Section 10910(b), Kern County must:

> *…[i]dentify any water system whose service area includes the project site and any water system adjacent to the project site that is, or may become as a result of supplying water to the project, as defined in Section 10912, that may supply water for the project.*

There are a number of water purveyors whose service areas cover, or are near to, the Project site, and some even overlap, as described in detail in Section 4. However, the location itself is in an unincorporated area, and no public water utility currently provides drinking water to the area through an established distribution system of trunk lines and delivery connections.

3.4 Urban Water Management Plan

Pursuant to California Water Code Section 10910(c), Kern County must:

> *…request each public water system … to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan.*

California City prepared an Urban Water Management Plan (UWMP) as required by state law (California City 2017). California City's service area does not include the Project site; however, its UWMP contains information regarding both water recharge and sustainable yield for the local groundwater basin (Fremont Valley). Therefore, it is a source of information for existing and future water demand in the FVGB. Because the Project would not be sourcing its water supply from the AVGB, equivalent information about the recharge rate and sustainable yield for the AVGB is not included in this WSA. The Project site is within the service area of the Antelope Valley – East Kern Water Agency (AVEK), a wholesale water supplier that provides water to both California City and MPUD. Therefore, the Project site is included within the AVEK service area and was considered in AVEK's 2020 UWMP (AVEK 2021a). To the extent AVEK's 2020 UWMP includes MPUD as a wholesale water customer, AVEK's UWMP provides information relevant to water supply for the Project.

4.0 SUPPLY AND DEMAND ANALYSIS

4.1 Methodology for Water Resources Evaluation

A summary of the availability of surface water and groundwater resources in the region is provided as a baseline. Local water suppliers are then identified and their capacity to provide water for the Project is summarized.

4.2 Regional Water Resources

There are several water purveyors in the Antelope and Fremont Valleys in eastern Kern County; Table 1 lists providers and Figure 5 shows water agency service areas relative to the Project site. Part of this evaluation is to consider whether or not the Project's expected water demand is factored into any of the management plans prepared by the proposed water providers. As aforementioned, all water sourced for the Project would be derived from the FVGB or potentially from supplemental, imported State Water Project (SWP) water through MPUD.

Primary water supply would come from two proposed groundwater wells (or any potential existing onsite wells) within the Project site, located within the boundaries of the FVGB, as discussed in

Section 4.3 *Project Resources Availability*, below. Additionally, RMR has provided a will-serve letter to supply the Project with 2 AF of water per day during its construction and operations (Attachment 1). MPUD has also provided a will-serve letter to supply the Project with 200 AF of water annually during the Project's construction period (Attachment 2). Groundwater pumped from the FVGB accounts for all of the water provided by RMR's groundwater well, located at 16175 Tehachapi Willow Springs Road (Attachment 1). Additionally, supplemental supplies are available from AVEK's SWP supply through MPUD (Fremont Basin Regional Water Management Group 2019) (Attachment 2). Because MPUD serves fewer than 3,000 service connections, it is not a public water system as defined in California Water Code Section 10912.

Table 1. Water Providers in the Vicinity of the Project Site

Water Purveyor	Jurisdiction	Role
Antelope Valley – East Kern Water Agency (AVEK)	Parts of Los Angeles, Kern and Ventura Counties	AVEK is a wholesale water provider that treats, delivers, and stores water, providing treated water to retail agencies and untreated water to agricultural customers within its 2,400-square-mile service area. The Agency's current demand is approximately 50,000 acre-feet per year (AFY). AVEK provides imported surface water from the State Water Project (SWP).
Fremont Basin Regional Water Management Group	Fremont Groundwater Basin (#6-46)	Organization comprising California City, Mojave Public Utilities District (MPUD), and AVEK formed in 2014.
California City Water Department (CCWD)	California City	CCWD is a local water supplier (CS1510032) with 4,570 service connections serving a population of 14,198 (DDW 2022). It provides water from two primary water sources: local groundwater and surface water from the SWP.
MPUD (CA1510014)	Town of Mojave	MPUD provides water and wastewater services to the town of Mojave. It maintains and operates the water and sewer system to 1,200 service connections, meeting all local, state, and federal guidelines. The MPUD serves a population of 4,230 (DDW 2022). Since it has fewer than 3,000 service connections, it is not considered to be a public water system as defined in California Water Code Section 10912. MPUD has six wells. Wells 21 and 22 are in the Chaffee Subunit and wells 6, 7, 8, and 9 are in the Cameron Flat area, all located within the FVGB.
Rosamond Community Service District (RCSD)	Town of Rosamond	RCSD's water supply is from local groundwater and imported surface water from AVEK; one of 29 State Water Contractors for the importation of water from the SWP.
RMR Water Trucks and Rental Equipment, Inc. (RMR)	Southern California	RMR is based in Castaic, California and focuses on serving the businesses and residents of Los Angeles, Kern, and Ventura Counties. RMR has wells adjacent to the Project site within the Fremont Valley groundwater basin (see Attachment 1 for RMR will-serve letter).

4.3 Project Resource Availability

The primary source of water used during construction and operations would be sourced from two proposed wells (or any potential existing onsite wells) located on the Project site, within the boundaries of the FVGB. Further specifications for these two proposed wells will be provided within the groundwater well construction permit applications. If needed, supplemental water may be sourced from RMR and MPUD, both of which have provided will-serve letters for the Project

(Attachments 1 and 2). The most likely local, supplemental provider is RMR, which has provided water supply to other local energy projects and has committed to providing water for the Project from their Fremont Valley groundwater wells. In particular, RMR has agreed to provide water from their FVGB well located at 16175 Tehachapi Will Springs Road (Attachment 1). RMR also has several wells adjacent to, but outside of the Project site, that draw water from the FVGB. As a third potential option, the Project may also use supplemental surface water provided by MPUD purchased from the SWP. Water storage facilities may be constructed on the Project site for holding water.

4.3.1 Surface Water Availability

Although direct use of surface water is not a viable local resource in the Project area, it is considered here because of the availability of SWP inflows. The SWP supplies surface water runoff captured from rivers draining the northern and central Sierra Nevada Mountains.

The Fremont Valley has no viable surface water resource near the Project site or in distant parts of the valley. The surface water resources used in the area come primarily from the SWP and are delivered to local water suppliers at wholesale rates by AVEK. MPUD has access to, and historically has purchased water from, the SWP. The most recent assessment of imported surface water availability for the AVEK service area quantifies projections for surface water during a single dry year (7,242 acre-feet per year [AFY]), based on conditions in 2014, and for an extended drought period (ranging from 17,854 AFY to 46,677 AFY) based on the period from 1988 to 1992 (the lowest 5-year allocation period). In addition, the projection for the 20-year period starting in 2020 and ending in 2040 predicts the allocations of surface water from the SWP will decline slightly from 84,010 AFY to 75,320 AFY over this period (WSC 2021).

4.3.2 Groundwater Availability

The general groundwater basins underlying the Project site are the Antelope Valley groundwater basin (DWR #6-044) and Fremont Valley groundwater basin (DWR #6-046), as identified by DWR (DWR 2004). Under the Sustainable Groundwater Management Act (SGMA) evaluation process, neither the FVGB nor the AVGB basin have been identified as overdrafted and are currently identified as low priority basins. The Project would not use the AVGB as a water supply; therefore, it will not be discussed further.

The FVGB covers a surface area of 523 square miles and includes the towns of Mojave and California City. The FVGB is identified as a low-priority basin by DWR. The groundwater storage capacity of the basin has been calculated to be 4,800,000 AF, with limited groundwater level declines over the last part of the 20th century (DWR 2004). The FVGB represents a smaller groundwater resource but also has a smaller population and water demand. The moderate increases in water levels seen in some parts of the basin can be attributed in part to delivery of imported surface waters by AVEK starting in 1980 and a period of above average rainfall from 1977 through 1984. Native recharge to the basin has been estimated through modeling and observation to be approximately 11,300 AFY into the northeastern subarea and 2,500 AFY into the southwestern subarea, mostly from surface water runoff (Woodward and Curran 2018). The most recent assessment of groundwater availability for the AVEK

service area projects 11,200 AFY of groundwater availability during a single dry year and 10,731 to 11,209 AFY for an extended drought period (RWMG 2019).

4.4 Project Water Demand

The Project would require a short-term, temporary water supply during the construction and decommissioning periods (each approximately 34 months), and a long-term water supply during the operational period (projected to be 35 years). The anticipated water requirements for these periods, in terms of their annual rate and total demand, are summarized in Table 2. The water demand estimates summarized in Table 2 are evaluated for the WSA's required 20-year projection and the Project's anticipated operational lifespan of 35 years. These demands allow a quantitative analysis of the availability and reliability of the existing water supply for the Project.

Table 2. Estimated Project Water Demand

Project Phase	Annual Demand (AFY)	Total Demand (AF)
Construction[1/]	452	1,266
Operation and Maintenance[2/]	20	700
Decommissioning[3/]	452	1,266
TOTAL DEMAND		3,232

Notes:

1/ The Project construction period is estimated at approximately 34 months. The full Project construction water demand will occur over this period. Construction-period water demand is estimated to be approximately 1,266 acre-feet (AF) regardless of the duration of construction. A longer construction period would result in a lower annual construction demand.

2/ O&M period is assumed to be 35 years. This is 15 years longer than the 20-year projection required to be considered in a WSA. The 35-year period is considered for full disclosure and conservative analysis; this table presents all anticipated water demands of the Project over its anticipated operational lifespan.

3/ Decommissioning activities for the project are not specifically known at this time; therefore, in order to provide conservative analysis that accounts for all project phases, this analysis assumes that the Project's decommissioning period would be the same as the Project's primary construction period, in terms of duration (34 months).

The estimated water demand (construction plus operation) for the Project, amortized over approximately 38 years, is approximately 52 AFY. The demand sequence includes 39 percent of the total water use in the first 34 months (construction period, approximately 452 AFY), 22 percent over the subsequent 35 years (operations period, approximately 20 AFY), and 39 percent for the remaining decommissioning period. The estimated water demand of the Project (including construction, operation, and decommissioning), amortized over approximately 41 years, is approximately 79 AFY.

4.4.1 Construction

The estimated construction period annual water demand (452 AFY) would average about 1.4 AF (456,191 gallons) per workday over the Project's anticipated 34-month construction period.

4.4.2 Operation and Maintenance

The long-term operational water demand for the Project (approximately 20 AFY) is expected to be met by local groundwater, pumped solely from the FVGB.

4.4.3 Decommissioning

The Project's decommissioning water use is estimated to be up to 1,266 AF in total, based on comparable water use required for construction. Decommissioning water demand would mainly be

associated with dust control and would occur over the discrete timeframe required to remove above ground components and reclaim the Project site.

4.5 Water Supply

The exclusive water supply source for the Project will be groundwater taken from the FVGB, from two new onsite wells (or any existing onsite wells). Supplemental water, if needed, will be provided by RMR, or potentially, from MPUD SWP water. The FVGB is considered to have a low priority under SGMA because it is not in an overdraft condition and the projected increases in existing water users' water demand are relatively modest. Because the FVGB is a low priority under SGMA, requirements for development of a groundwater sustainability plan (GSP) are not immediate and therefore one has not been prepared for the basin. While a GSP has not been required for the FVGB, a water supply plan has been prepared for the Fremont basin. See Table 4 below for FVGB water availability sourced from the Fremont Basin Integrated Regional Water Management Plan (IRWMP).

The reliability of water supply from the FVGB is high. It provides a significant storage capacity for groundwater, its use is currently sustainable, and projections for growth in population and activity are modest. It is supported by imports of water from the SWP and also takes advantage of recycled water to lessen demands on the groundwater resource.

4.6 Water Reliability Assurance

Recent evaluations of water supply availability within the FVGB indicate that MPUD will have an available surplus of water through 2060, as shown in Table 3. This surplus of water is a conservative projection which does not include supplemental water from other sources such as RMR.

Table 3. Projected Water Provider Supply Availability

Water Purveyor	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)	2050[2/] (AFY)	2060[2/] (AFY)
MPUD[1/]						
Groundwater Production	2,108	2,108	2,108	2,108	2,108	2,108
AVEK Supply	84	84	84	84	84	84
Demand	1,214	1,307	1,408	1,516	1,757	2,037
Available Surplus	*888*	*795*	*694*	*586*	*345*	*65*

Notes:

1/ AVEK 2021b; Jacobs 2022.

2/ Projected supply values based on current numbers; demand numbers have been increased based on projection rates similar to those in the years 2030, 2035, and 2040.

AFY = acre-feet per year; AVEK = Antelope Valley – East Kern Water Agency; MPUD = Mojave Public Utilities District

The water demand estimates in the Fremont Basin IRWMP account for the entire FVGB and provide projected values for residential, industrial, and agricultural uses over the period from 2015 to 2040. Groundwater pumping is projected to increase over the next two decades due primarily to population growth, cannabis cultivation, and agricultural growth (RWMG 2019). Table 4 presents the IRWMP water use projections for the period from 2025 to 2040 and extends these estimates for two additional 10-year periods at consistent increases, through 2060 (the approximate decommissioning date of the Project). These values are provided to evaluate the projected demands related to the available supply.

Table 4. Projected Fremont Valley Water Availability[1/]

Water Supply Category	2025 (AFY)	2030 (AFY)	2035 (AFY)	2040 (AFY)	2050[2/] (AFY)	2060[2/] (AFY)
Baseline						
Groundwater	7,984	8,456	8,931	9,893	10,882	11,971
Imported Water	1,240	1,300	1,360	1,420	1,482	1,548
Recycled Water	816	850	884	988	1,105	1,235
Totals	*10,040*	*10,606*	*11,175*	*12,301*	*13,469*	*14,753*
Light Growth Demand						
Groundwater	8,925	9,868	10,813	12,246	13,838	15,637
Imported Water	1,240	1,300	1,360	1,420	1,482	1,548
Recycled Water	816	850	884	988	1,105	1,235
Totals	*10,981*	*12,018*	*13,057*	*14,654*	*16,425*	*18,420*
Medium Growth Demand						
Groundwater	10,125	11,669	13,213	15,246	17,594	20,303
Imported Water	1,240	1,300	1,360	1,420	1,482	1,548
Recycled Water	816	850	884	988	1,105	1,235
Totals	*12,181*	*13,818*	*15,457*	*17,654*	*20,181*	*23,086*
Heavy Growth Demand						
Groundwater	11,325	13,468	15,613	18,246	21,330	24,934
Imported Water	1,240	1,300	1,360	1,420	1,482	1,548
Recycled Water	816	850	884	988	1,105	1,235
Totals	*13,381*	*15,618*	*17,857*	*20,654*	*23,917*	*27,717*

Notes:

1/ Data source: RWMG 2019, Table 3-10. Values include water use by MPUD, California City, other water providers, and pumping from private wells.

2/ Projected values have been increased at rates similar to those in the years 2030, 2035, and 2040.

The continuing supply of imported surface water through AVEK offsets the potential overuse of groundwater. Though the supply of surface water varies, in an average year, allocations of SWP supplies are estimated as 59 percent of the contracted (or maximum) amount of 144,844 AFY to AVEK (for their whole service area, not just the Fremont Valley). To consider drought scenarios, the IRWMP relies on the historical record for precedents of single-year and multiple-year droughts, and uses values based on the actual water supplied for specific drought conditions. For the worst case, a single dry year, data from 2014 were used, when only 7,200 AFY was received by AVEK. The multiple-dry year scenario data came from the period of 1990 through 1992, when 17,400 AFY, 23,200 AFY, and 34,800 AFY came to AVEK from the SWP (RWMG 2019).

The IRWMP's projected water demands in the Fremont Valley account for the Project's construction and operational water demands; thus, Project water demand would not result in a "new" demand not analyzed in the IRWMP. The IRWMP data show a variable but significant water supply to the region, including supply to the Fremont Valley area, which water supply would be sufficient to accommodate Project water demands.

5.0 WATER AVAILABILITY CONCLUSIONS

There is ample supply in the basin as a whole, primarily from a significant groundwater resource. This groundwater resource has had some declines in water levels in the past, but more recently has shown signs of stabilization and even rebound in some areas (DWR 2004; RWMG 2019). The SWP surface

water imports through AVEK offset groundwater use in the basin, and over longer cycles have provided recharge to this groundwater resource. This import supply only strengthens the stability of the basin's groundwater resource. Based on the information presented above, sufficient water is available for construction of the Project, especially given the surplus water available from MPUD (795 to 888 AF) during the construction period. Sufficient water is also available for Project operations, which represents a small number (20 AFY) in comparison to the current (10,040 AFY) and projected (12,301 AFY) water demand for the region.

5.1 Mitigation Measures

The results of this WSA indicate that the Project would have an ample supply of water from the FVGB, and no mitigation measures are recommended.

6.0 REFERENCES

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1&FROMDAY=1&FROMYEAR=1951&THRUMONTH=3&THRUDAY=19&THRUYEAR=2023&DT_PRECIP=1&PRECIP_BACKUP1=.&PRECIP_BACKUP2=.&PRECIP_BACKUPAVG=PALMDALE.C&AIR_BACKUP1=.&AIR_BACKUP2=.&AIR_BACKUPAVG=PALMDALE.C&AIROBS_BACKUP1=.&AIROBS_BACKUP2=.&AIROBS_BACKUPAVG=.&WX_BACKUP1=.&WX_BACKUP2=.&WX_BACKUPAVG=.&UNITS=E&FFMT=F&ACTION=RETRIEVE+DATA#summary (accessed March 2023).

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FIGURES

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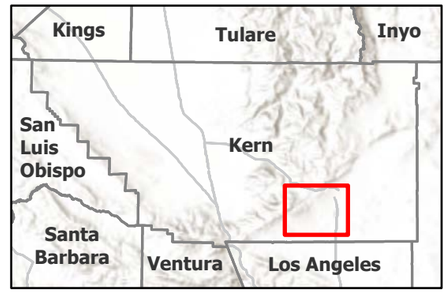
Discovery Solar PV and Storage Project

Kern County, CA

Figure 1. Regional Overview



Windhub High-voltage Substation (Existing)

Watercourse

Proposed Project Features

Project Site

Gen-tie Line (New)

Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

Step-up HV substation

Gen-tie Corridor

*Already approved under separate projects.

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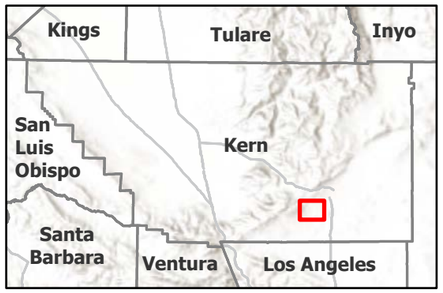
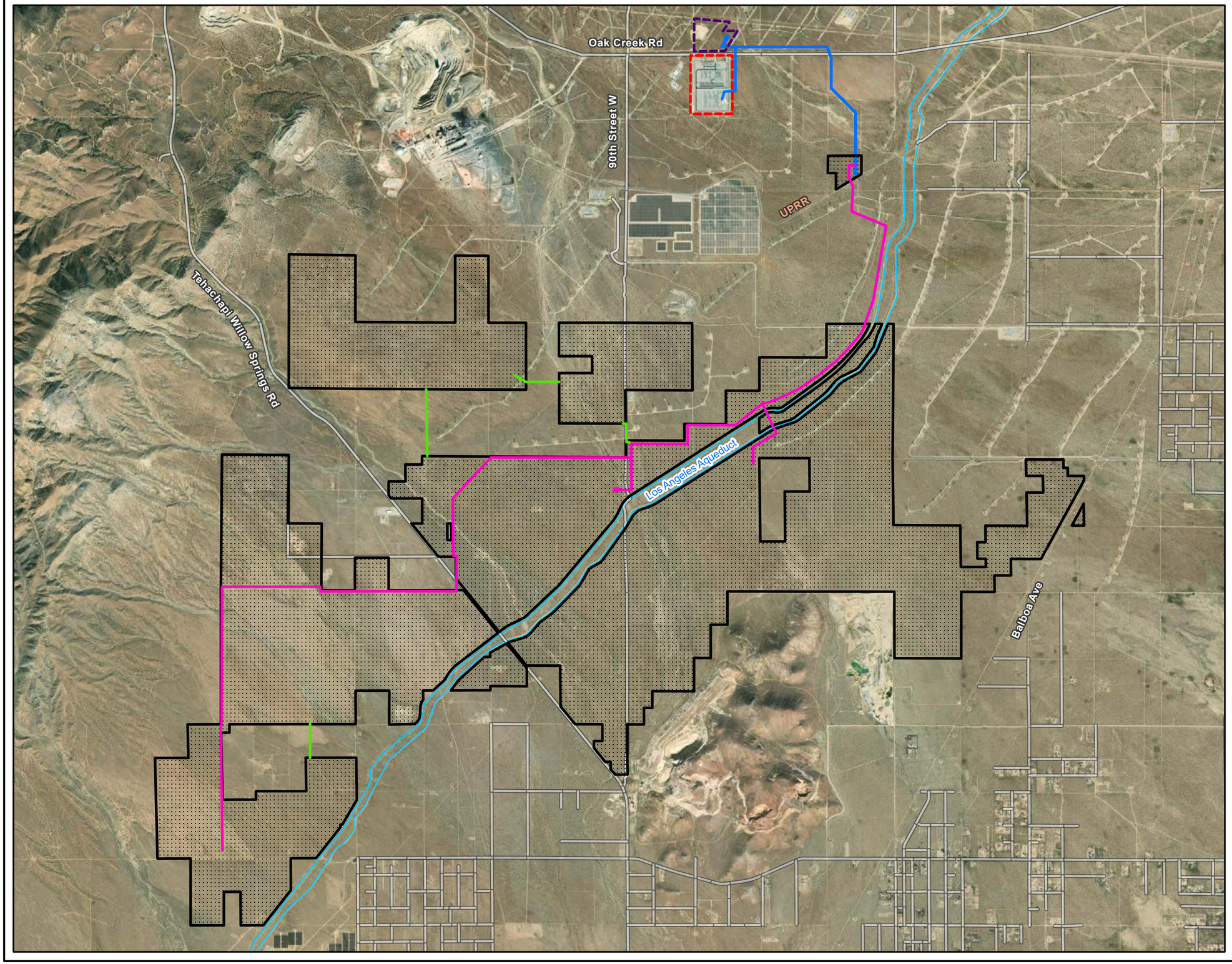
Discovery Solar PV and Storage Project

Kern County, CA

Figure 2. Project Location





- Windhub High-voltage Substation (Existing)
- Roads
- Watercourse

Proposed Project Features

- Project Site
- Gen-tie Line (New)
- Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

- Step-up HV substation
- Gen-tie Corridor

*Already approved under separate projects.

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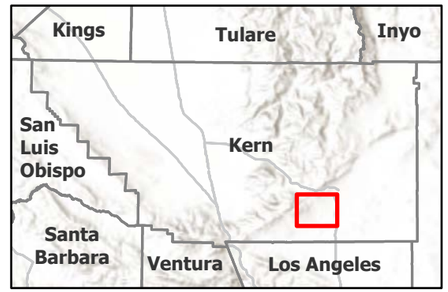
Discovery Solar PV and Storage Project

Kern County, CA

Figure 3. USGS Topographic Map



Windhub High-voltage Substation (Existing)

Proposed Project Features

- Project Site
- Gen-tie Line (New)
- Medium-voltage/Transmission/Access Easements

Other Applicant and/or Affiliate Controlled*

- Step-up HV substation
- Gen-tie Corridor

*Already approved under separate projects.

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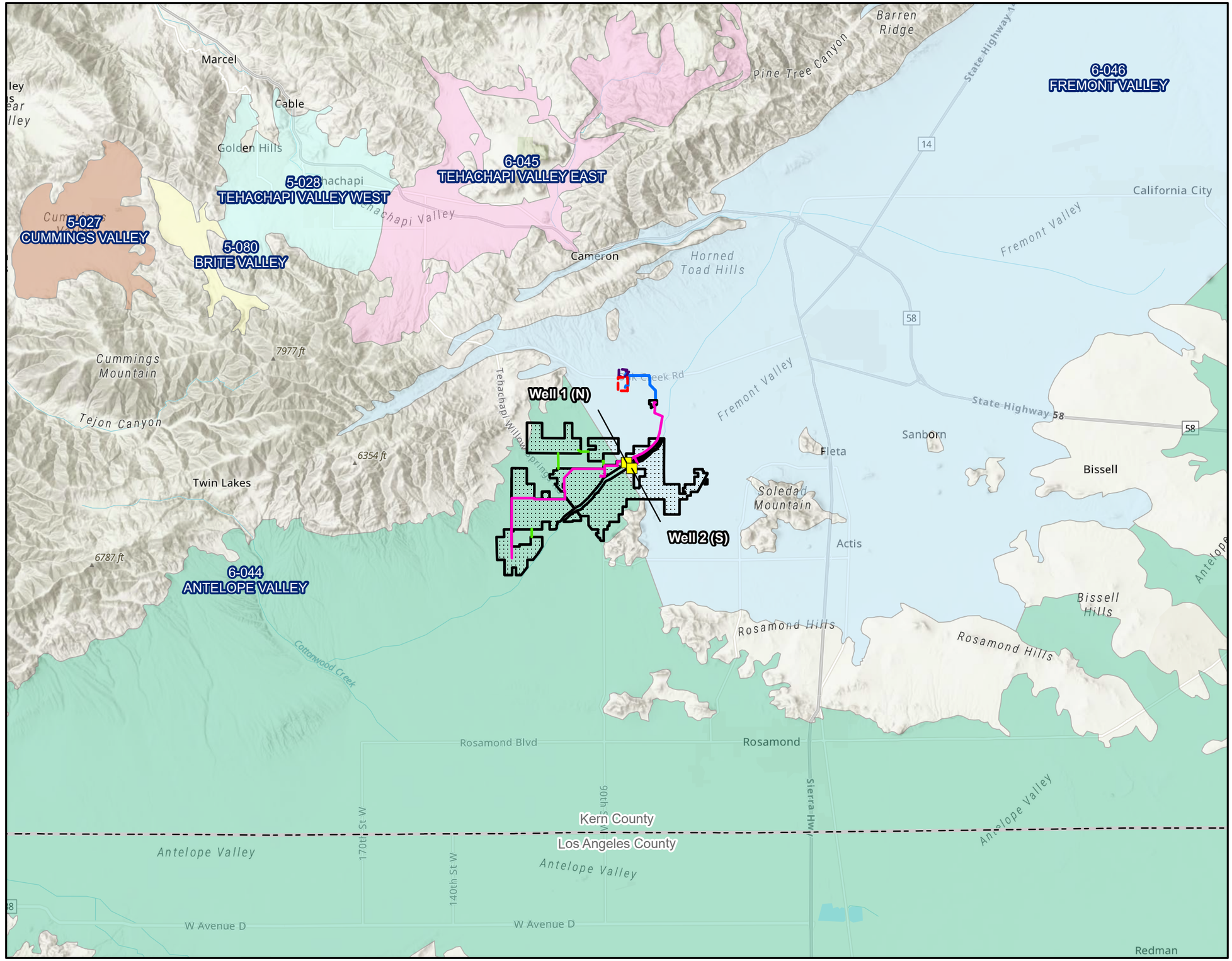
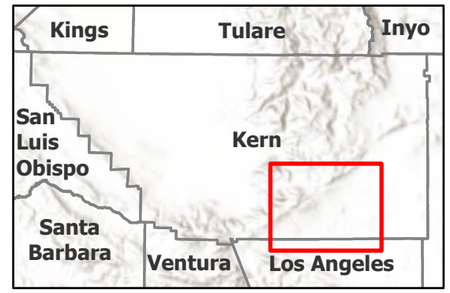
Discovery Solar PV and Storage Project

Kern County, CA

Figure 4. Groundwater Basins





- Preliminary Well Location
- Windhub High-voltage Substation (Existing)
- County

Groundwater Basin

- Antelope Valley
- Brite Vally
- Cummings Valley
- Fremont Valley
- Tehachapi Valley East
- Tehachapi Valley West

Proposed Project Features

- Project Site
- Gen-tie Line (New)
- Medium-voltage/Transmission/ Access Easements

Other Applicant and/or Affliate Controlled*

- Step-up HV substation
- Gen-tie Corridor

*Already approved under separate projects.

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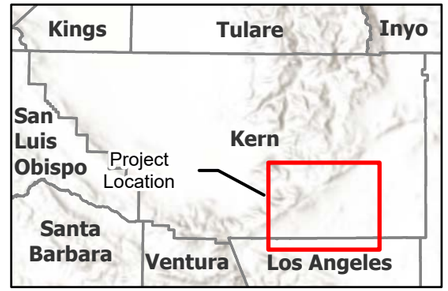
Discovery Solar PV and Storage Project

Kern County, CA

Figure 5. Water Agency Service Areas



Windhub High-voltage Substation (Existing)

County

Proposed Project Features

Project Site

Gen-tie Line (New)

Medium-voltage/Transmission/ Access Easements

Other Applicant and/or Affliated Controlled*

Step-up HV substation

Gen-tie Corridor

Retail Water Service Area

California City Water Department

Mojave Public Utilities District

Rosamond Community Service District

Wholesale Water District

Antelope Valley - East Kern Water Agency

Kern County Water Agency

*Already approved under separate projects.

Kern County

Los Angeles County

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ATTACHMENT 1. RMR WILL-SERVE LETTER

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RMR WATER TRUCKS

OFFICE: 661.510.8516
FAX: 661.294.8522
32016 N. CASTAIC RD.
CASTAIC, CA 91384

May 15, 2024

Terra-Gen, LLC – Attn: Sam Sours
11512 El Camino Real
Suite 370
San Diego, Ca 92130

Dear Mr. Sours

Discovery Solar PV and Storage project, owned by Discovery Solar PV and Storage, LLC has contacted RMR Water Trucks regarding the purchase of construction and operational water for a solar project anticipated to begin construction in 2026.

The Discovery Solar PV and Storage project has an estimated water demand of approximately 265,900,000 gallons (816 acre-feet) of water during construction activities.

During operations approximately 6,600,000 gallons/year, or 20 acre-feet/year is anticipated.

RMR Water Trucks has been providing construction and operations water to green energy development projects in Kern County since 2009. The Company intends to provide water for the Discovery Solar PV and Storage Project from its water source at 16175 Tehachapi willow springs road. The water turnout has a verified rating of 600 GPM, so producing 2-acre foot per day is feasible. Barring any unknown circumstances, we will be ready to provide water for this project in 2026.

If you have any questions, please feel free to contact me at 661 510 8516.

Thank you,

Deke Pike
President

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ATTACHMENT 2. MPUD WILL-SERVE LETTER

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Mojave Public Utility District
15844 K Street
Mojave, CA 93501
Telephone: (661) 824-4161 Fax: (661) 824-2361

May 3, 2024

TERRA-GEN
Attn: Simon Day
11512 El Camino Real, Suite 370 San Diego, CA 92130

Dear Mr. Day:

Re: Will serve letter for Construction water

Mojave Public Utility District will provide construction water for the Discovery Solar PV and Stoarge Project. A total of 200 acre feet of water per year for construction will be provided over the course of the project beginning in Q4 of 2025 and continuing for up to 36 months. Water usage will not exceed 200 acre feet during any given year.

A. An approved back flow preventer will be used at the District approved tie-in location.

B. Any and all off-site facilities required by the project will be furnished at no cost to the District. The facilities required may include, but are not limited to: Storage reservoirs, booster pump stations, pressure reducing stations, turnouts, or pipelines.

C. The conditions of this letter are in effect for one year from the date indicated on this letter, after which the letter becomes void. The letter holder may renew prior to the expiration date. No notice will be sent to alert the letter holder that an expiration date is approached. If a letter is allowed to expire, the applicant may re-apply pursuant to District rules and regulations. However, a renewed will serve letter may have conditions that differ from the original letter.

THIS WILL SERVE LETTER IS SUBJECT TO TERMINATION AT ANYTIME
Please contact me with any questions regarding this letter at 661-824-4161.

Damian Rickman
General Manager

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Appendix L2
Will Serve Letters for Construction Water

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RMR WATER TRUCKS

OFFICE: 661.510.8516
FAX: 661.294.8522
32016 N. CASTAIC RD.
CASTAIC, CA 91384

May 15, 2024

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11512 El Camino Real
Suite 370
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Deke Pike
President

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Damian Rickman
General Manager