
Appendix H



Project No. S2598-07-01
November 6, 2024

Raney Planning and Management, Inc.
1501 Sports Drive, Suite A
Sacramento, California 95834

Attn: Angela DaRosa

Subject: PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT PEER REVIEW LETTER
113.49-ACRE PROPERTY
9350 SHELDON ROAD
ELK GROVE, CALIFORNIA

Ms. DaRosa:

This letter summarizes our review of the Phase I Environmental Site Assessment (ESA) Report dated June 7, 2024, and prepared by Pinnacle Environmental, Inc. (Pinnacle) for the property located at 9350 Sheldon Road (the site) in Elk Grove, California.

BACKGROUND

The site consists of a 113.49-acre parcel developed with a vacant dwelling, detached garage, and an outbuilding. The site is currently unoccupied but was previously used for recycled asphalt storage which has since been discontinued. Pinnacle states that the site has been used for agricultural purposes starting in the 1950s through the 1990s, mainly as a dairy farm starting in the 1970s. Footprints of the former agricultural-related structures, including the former barn and other outbuildings are present at the site. Wastewater from dairy operations was previously stored in a lagoon with documented discharges to a nearby Laguna Creek.

PHASE I ESA REPORT FINDINGS AND RECOMMENDATIONS

Pinnacle identified the following two RECs:

- Multiple violations for wastewater management from dairy operations regarding unauthorized releases to a nearby creek (Laguna Creek) and potential residual manure solids and associated organics in soils at the site.
- Potential former aboveground storage tanks (ASTs) were noted in site photographs in photographs received from the Central Valley Regional Water Quality Control Board (CVRWQCB).

Pinnacle noted multiple non-REC issues related to the site such as:

- Former use of the site for agricultural purposes since the 1950s and operation of a dairy farm from the 1970s through the 1990s and potential methane impacts from residual organics at the site.
- Potential asbestos-containing material (ACM) and lead-based paint (LBP) related to current and former structures at the site.
- A 240-foot long by 40-foot wide by up to 10-foot high soil pile and asphalt grindings pile on the northwestern portion of the property.
- Three existing wells including a domestic well located near the site dwelling, a possible irrigation well located on the eastern site boundary near Sheldon Road, and a relatively newer fenced-in well along the northwestern site boundary and Waterman Road.

Pinnacle also observed a partially excavated septic tank related to the site dwelling but did not consider its presence a concern unless there was an indication that hazardous materials were disposed of into the septic system. If there is suspicion regarding the disposal of hazardous materials into the septic system, then Pinnacle would recommend a subsurface investigation. Pinnacle also observed what appeared to be two approximately 24-inch round pipes in series which Pinnacle labeled “anomalous metal structures” southeast of the site dwelling. Pinnacle mentioned that if the pipes or metal structures are dry wells, then further assessment would be prudent. Pinnacle noted no other RECs or non-REC issues regarding the site.

Recommendations in the Phase I ESA report included:

- Additional assessment of the soil related to the former dairy wastewater lagoon prior to development.
- Laboratory analysis of the soil pile if the soil is to be used on the site.
- Assessment of the anomalous metal structures if they are dry wells.
- Prior to any demolition, renovation, or any activity related to the disturbance of existing and former site structures, an inspection should be performed for ACM and LBP.
- If the wells at the site are not designated for future use, then they should be abandoned or analyzed for drinking water parameters if they are planned to be used.

PEER REVIEW OPINION

In general, we agree with the findings and recommendations presented in Pinnacle's Phase I ESA Report. However, we found that some environmental issues may have been missed during Pinnacle's Phase I ESA. We identify the following additional issues:

- We observed in recent and historical aerial photography that multiple mounds, ostensibly soil overgrown with grass, in the northwest portion of the site. Based on Google Earth imagery, these mounds begin to appear at the site in 2003 and are present in imagery from January 2024. Additionally, there are multiple soil mounds directly north of the 240-foot by 40-foot wide by 10-foot high pile. Given that the source of the multiple soil mounds and piles was not provided to Pinnacle during the Phase I ESA, we recommend assessment of these piles via test pits and soil sampling in accordance with the Department of Toxic Substances Control's Advisory for Clean Import Fill, dated October 2001.
- Pinnacle identified former site ASTs as RECs in the Phase I ESA report; however, no recommendation for further assessment was provided. Given the uncertainty of the AST locations and quantities, we recommend that a Soil Management Plan be prepared and submitted that identifies petroleum hydrocarbons as a contaminant of concern during any future excavation or grading activities at the site.

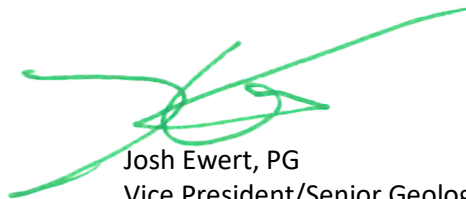
We appreciate the opportunity to assist you with this project. Please contact the undersigned if there are any questions concerning this letter or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.



Trevor Hartwell, PG
Senior Geologist



Josh Ewert, PG
Vice President/Senior Geologist

Appendix I



March 10, 2025

PEI Project #23-5794A

**Mr. Bryan Wilson
Sheldon Business Park
8940 Elder Creek Road
Sacramento, California 95829**

**Subject: June 7, 2024 Phase I Environmental Site Assessment Addendum
Limited Soil Pile Excavation Observations
Summer Villas - 9350 Sheldon Road, Elk Grove, 95624**

Pinnacle Environmental, Inc. (PEI), is pleased to present this report of findings to Sheldon Business Park (Client), for a limited soil pile excavation observation at the above-referenced subject property.

Background

PEI completed this field effort as an addendum to its June 7, 2024, Phase I Environmental Site Assessment (ESA). Based on communication with the Elk Grove Planning Department, a consultant for the EGPD (Geocon) requested clarification related to soil piles located on the subject property that were not identified as environmental concerns in the ESA. Per a February 24, 2025 email to the Client, the EGPD provided aerial photography from 2003 through 2024 which showed the two areas of potential concern to be addressed. EGPD requested additional explanation as follows (directly excerpted):

- 1. Revise the Pinnacle report to acknowledge all soil stockpiles, as well as to provide a conclusion about them. For example, the report should be revised to identify the large soil stockpile association with the traffic circle and provide language as to why it is not a concern. The report should also acknowledge the additional stockpiles identified by Geocon. Test pits on those stockpiles should be performed to verify their contents, the results of which should be presented in the report. Alternatively, the report could include adequate recommendations for the stockpiles, such as testing prior to construction.*
- 2. Regarding the potential to encounter contaminated soil, we can include a mitigation measure based on our experience to ensure adequate remediation is conducted if such is encountered during construction activities. However, if the report will already undergo revisions per the above, it would be helpful if the report could also include revisions to acknowledge the potential to encounter contaminated soils during construction activities and add recommended measures to implement if such is encountered.*

In an effort to address the concerns of EGPD, PEI completed oversight of trenching efforts associated with “additional stockpiles identified by Geocon” on the northeastern and western portions of the property (see **Figure 1**).

LIMITATIONS

Soil, vapor and groundwater sampling were not included as part of this scope of work. This field screening assessment is not intended to define the extent of potentially impacted soil, soil vapor, or groundwater at the subject property, but rather is intended to discover area(s) of potential impacts within selected soil piles at the subject property. It should be recognized that this assessment was not intended to be a definitive investigation of potential impact at the subject property. Given that the Scope of Services for this investigation was limited, it is possible that currently, unrecognized impacts may exist at the site. Therefore, PEI cannot act as insurers and cannot “certify” that the site is free of environmental contamination, that impact does not exist above a certain level in other areas of the site, or that some other, currently unrecognized, environmental impact does not exist at the site.

LARGE WESTERN BORDER SOIL PILE

The soil/dirt piles at the western border along Waterman Road are reportedly dirt spoils from the construction of the Waterman/Sheldon roundabout. As described in the executive summary of the June 2024 Phase I ESA report, “*a large mound of soil (~240 feet long, ~10 feet tall, and ~40 feet wide) was observed along the western boundary of the property*”. Upon submission of our report, Pinnacle was not aware of the source of the soils and has since been told they were associated with the construction of the traffic circle/roundabout at Waterman & Sheldon. Pinnacle reviewed aerial photography and Google “street view” profiles of the soil pile area from 2015 to 2022. General observations from those photos are presented below:

- Construction of the traffic circle began in July 2016 and the soil pile was not present.
- By October 2016, the soil pile was present on the subject property, and traffic patterns in the grass indicated a “trail” to the north, which was towards the traffic circle.
- A November 2018 aerial appears to indicate new soils added to the existing pile. The pile appears to remain generally constant thereafter.
- Soil profile photos show no soil pile in 2015, a moderate soil pile in January 2017, and a taller soil pile in February 2021. These are generally consistent with the aerial photography reviewed.

Based on the above, the initial soil pile's location on the subject property is consistent with the timing of the traffic circle's construction and the widening of the road at the intersection of Waterman & Sheldon. Based on visual observations from aerial photography, this area has historically been an intersection of Waterman and Sheldon Road dating back to at least 1937. Agricultural use (dry farming) is generally observed on each of the sides of the intersection. It is not anticipated that hazardous materials are associated with the soil from the construction efforts that are currently located on the subject property.

ADDITIONAL SOIL PILE FIELD WORK/OBSERVATIONS

On Friday, March 7, 2025, PEI directed and observed the completion of exploratory trenches within area of the northeastern and western soil piles (**Figure 1**).

Northeastern Soil Piles

At approximately 8:30 am, PEI met with a client-provided excavator and operator to oversee and observe the trenching efforts. The northern soil piles appear to be approximately 25 individual piles of soil that were laid adjoining each other in an approximate “square” approximately 65 feet by 65 feet. The soil piles ranged in height from 3 to 4 feet high and were substantially covered by seasonal grasses.

PEI directed the operator to complete a narrow trench excavation at the north-northeastern edge of the northeastern piles. The completed trench was approximately 12 feet long and extended to a depth of approximately 3 to 4 feet (e.g., near the surface grade of the surrounding soils). The first trench completed was labeled T-1. Additional trenches were completed in a clockwise rotation with trenches being completed on the north (T-1, T-10, T-11, and T-12), east (T-2, T-3), south (T-4, T-5, and T-6), and west (T-7, T-8, T-9) sides of the soil pile perimeter. The approximate locations of the soil piles are shown **Figure 2**. Each trench was visually screened for potential impacts with constituents of concern using visual observations (e.g., evidence of staining or debris), olfactory observations (odor), and qualitative screening of vapor content (e.g., using a photo ionization detector [PID]).

With the exception of a small piece of 1-inch PVC piping in trench T-6, no debris was noted in the 12 trenches completed in the northeastern soil piles. The soils observed in the trenches contained no visual indications of staining. The soils observed in the trenches contained no indications of odors indicative of environmental impacts (e.g., hazardous constituents of concern). In addition, a soil sample from each trench was collected into a Ziploc bag for field screening with a PID calibrated to an isobutane standard. Vapor concentrations for each of the soil samples ranged from 6.5 to 7.3 ppm and did not indicate a concern for constituents of concern with volatile organic compounds (VOCs).

Based on the field observations, no impact with debris or constituents of concern were observed that warranted additional assessment (e.g., soil sampling with laboratory analysis).

Photographs of the northeastern trenches are included as Photo 1 through Photo 15 in the attached photolog.

Western Soil Piles

The western soil piles occupy a rectangular area approximately 190 feet by 70 feet and were substantially covered by seasonal grasses. The area appears to be separated into an eastern portion and western portion via a flat, 20 foot by 70 foot, gravel-covered pathway that extends north to south from the larger soil pile (discussed above) to the south to a north-northwestern intersection of Sheldon and Waterman Roads. The gravel pathway appears to have been part of the “loading” path for dirt spoils from the construction of the traffic circle that were stockpiled onsite between 2015 and 2021. There were four areas within the western piles which are discussed as follows:

Northwestern portion - These piles were consistent in size and shape with the northeastern piles (e.g., approximately eight individual adjoining soil piles). Trenches T-13, T-14, T-16, and T-17 were completed in this area. No debris was noted in the trenches completed in this area. The soils observed in the trenches contained no visual indications of staining. The soils observed in the trenches contained no indications of odors indicative of environmental impacts (e.g., hazardous

constituents of concern). The PID did not detect elevated vapor concentrations in soils from each of these trenches and, therefore, did not indicate a concern for constituents of concern with volatile organic compounds (VOCs).

Southeastern portion - These soil piles appear to be oriented in a more linear manner (east to west) with a taller central pile. Trenches T-15, T-19, and T-20 were completed in this area. Minor debris (1-inch PVC irrigation piping) was observed in T-19 and T-20. In addition, gravel was noted at the bottom of T-19 and T-20, which likely indicates the western abutting gravel path extends to the east beneath trenches T-19 and T-20. The soils observed in the trenches contained no visual indications of staining. The soils observed in the trenches contained no indications of odors indicative of environmental impacts (e.g., hazardous constituents of concern). The PID did not detect elevated vapor concentrations in soils from each of these trenches and, therefore, did not indicate a concern for constituents of concern with volatile organic compounds (VOCs).

Southwestern corner - Two trenches, T-21 and T-22, were completed within this area. T-10 extended to the western boundary of the marked area provided by EGPD. No indications of debris, staining or odor were observed in trench T-22.

A soil pile on the south border of the southwestern corner, contained visual evidence of debris including a brick, concrete, and the edge of two rusted 55-gallon drums. Visually, the drums appeared to be filled with soil, and no significant vapors were detected in the vicinity using a PID. Trench T-21 was completed in this area. However, due to the debris observed, T-21 was more of a shallow excavation than a narrow trench (as described previously).

PEI directed the excavator to carefully excavate the two 55-gallon drums and segregate them and other debris from the soil pile. Vapor screening during this excavation did not indicate the presence of elevated VOCs. Debris removed from the pile included the two rusted drums (one with a galvanized trash can inside), 1-inch PVC piping, a piece of perforated PVC piping (similar to leach line material), wood plank and gravel. Based on the material removed from the excavation, it appears consistent with materials from an irrigation/watering station associated with historic dairy farming. Soil was removed to a depth of 5 feet bgs (approximately the depth of the native material). No indications of hazardous constituents were observed. Specifically, no significant staining or odors were observed in the soils within T-9. The PID did not detect elevated vapor concentrations in soils from each of these trenches and, therefore, did not indicate a concern for constituents of concern with volatile organic compounds (VOCs).

Based on the field observations of the ten trenches in the western spoil piles (T13 to T-22), no indications of hazardous constituents of concern were observed that warranted additional assessment (e.g., soil sampling with laboratory analysis).

The approximate locations of the western soil piles are shown **Figure 3**. Photographs of the western trenches are included as Photo 16 through Photo 33 in the attached photolog.

CONCLUSIONS

PEI completed this field effort as an addendum to its June 7, 2024, Phase I Environmental Site Assessment (ESA). Based on communication with the Elk Grove Planning Department, a

consultant for EGPD (Geocon) requested clarification related to soil piles located on the subject property that were not identified as environmental concerns in the ESA.

For the large soil pile on the western border, PEI concludes the initial soil pile's location on the subject property is consistent with the timing of the traffic circle's construction and the widening of the road at the intersection of Waterman and Sheldon Road. Based on visual observations from aerial photography, this area has historically been a street intersection dating back to at least 1937. Agricultural use (dry farming) is generally observed on each side of the intersection. It is not anticipated that hazardous materials are associated with the soil from the construction efforts that are currently located on the subject property. Further assessment does not appear warranted.

For the "additional soil piles" identified by Geocon on the northeastern and western portions of the property (**Figure 1**), 22 trenches/exavations were completed in these areas. Twelve trenches were completed on soil piles in the northeastern portion of the property (**Figure 2**) and ten trenches were completed on the western portion of the property (**Figure 3**). With the exception of Trench 21 in the western portion of the property, no significant debris, staining, odor, or volatile component impacts were detected during the exploratory trenching in the 22 completed trenches.

Trench 21 contained debris that included metal, concrete and gravel which was excavated approximately 5 feet. Based on the material removed from the excavation, they appear consistent with materials from an irrigation/watering station associated with historic dairy farming. Upon removal of the debris, no significant staining, odor, or volatile component impacts were detected during excavation in this area.

Based on the above, no evidence of significant hazardous materials or waste disposal was observed during the trenching efforts on March 7, 2025. Therefore, these areas are not considered a recognized environmental condition, and further assessment does not appear warranted.

The exploratory excavation efforts did not indicate impacts that would require remediation if encountered during construction activities, nor did it encounter contaminated soils/materials that would require a soil management plan (SMP). However, as with many construction sites, it is possible that unanticipated soils could be encountered that require specific handling (e.g., segregation, testing, etc.). If desired, a soil management plan could be prepared to address such concerns (if encountered during construction).

CLOSURE

PEI appreciates the to be of service on this project. Please call if you have any questions.

Sincerely,
Pinnacle Environmental, Inc.



Peter K. Cloven, CEM, EP
Project Manager

Att: Figures 1-3; Photolog 1-33

FIGURES



Soil Piles Identified by Geocon/City of Elk Grove
Summer Villas – 9350 Sheldon Road, Elk Grove, CA

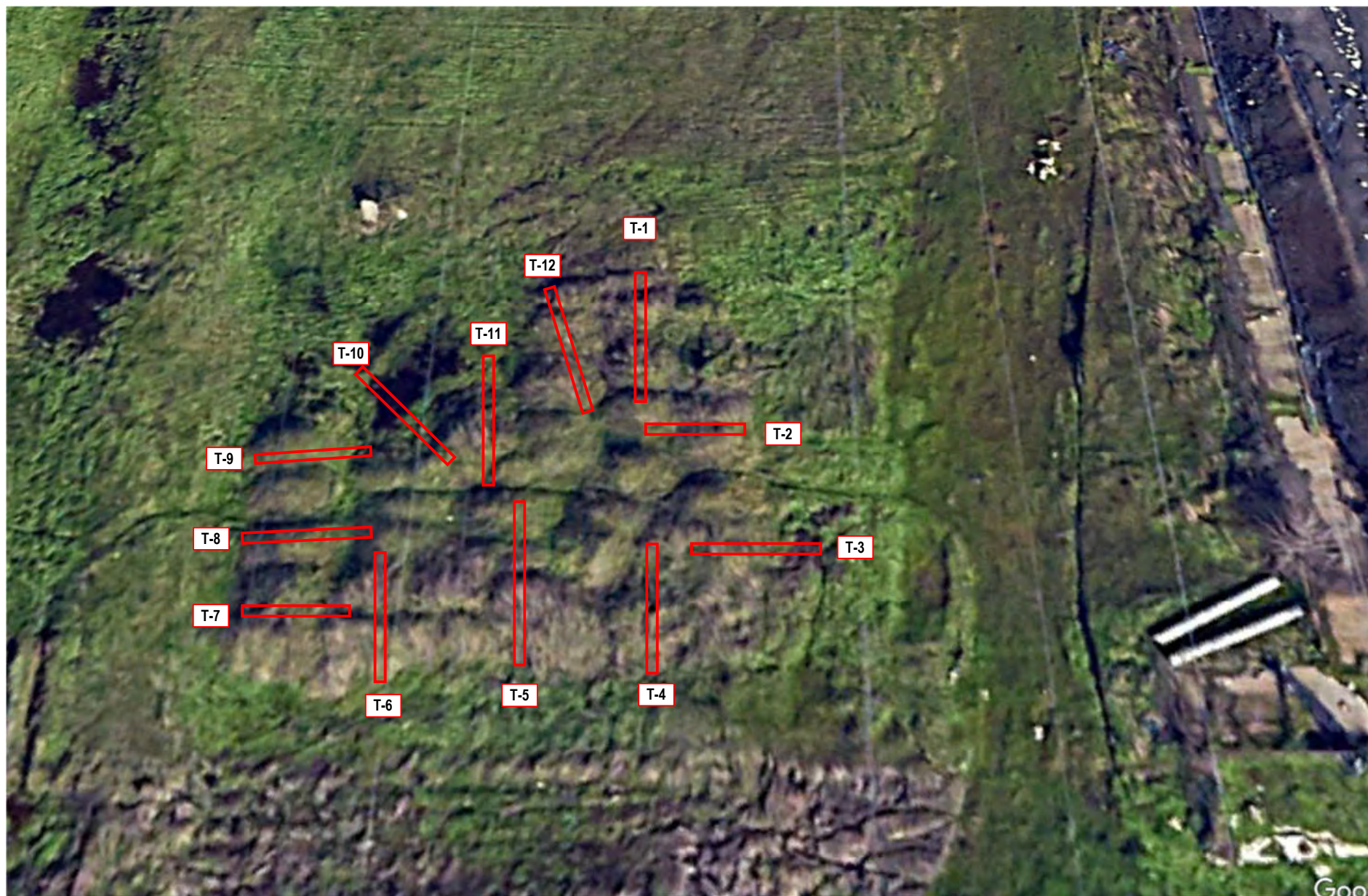


 Soil Pile Location



FIGURE:

1



Northeastern Soil Piles
Summer Villas – 9350 Sheldon Road, Elk Grove, CA

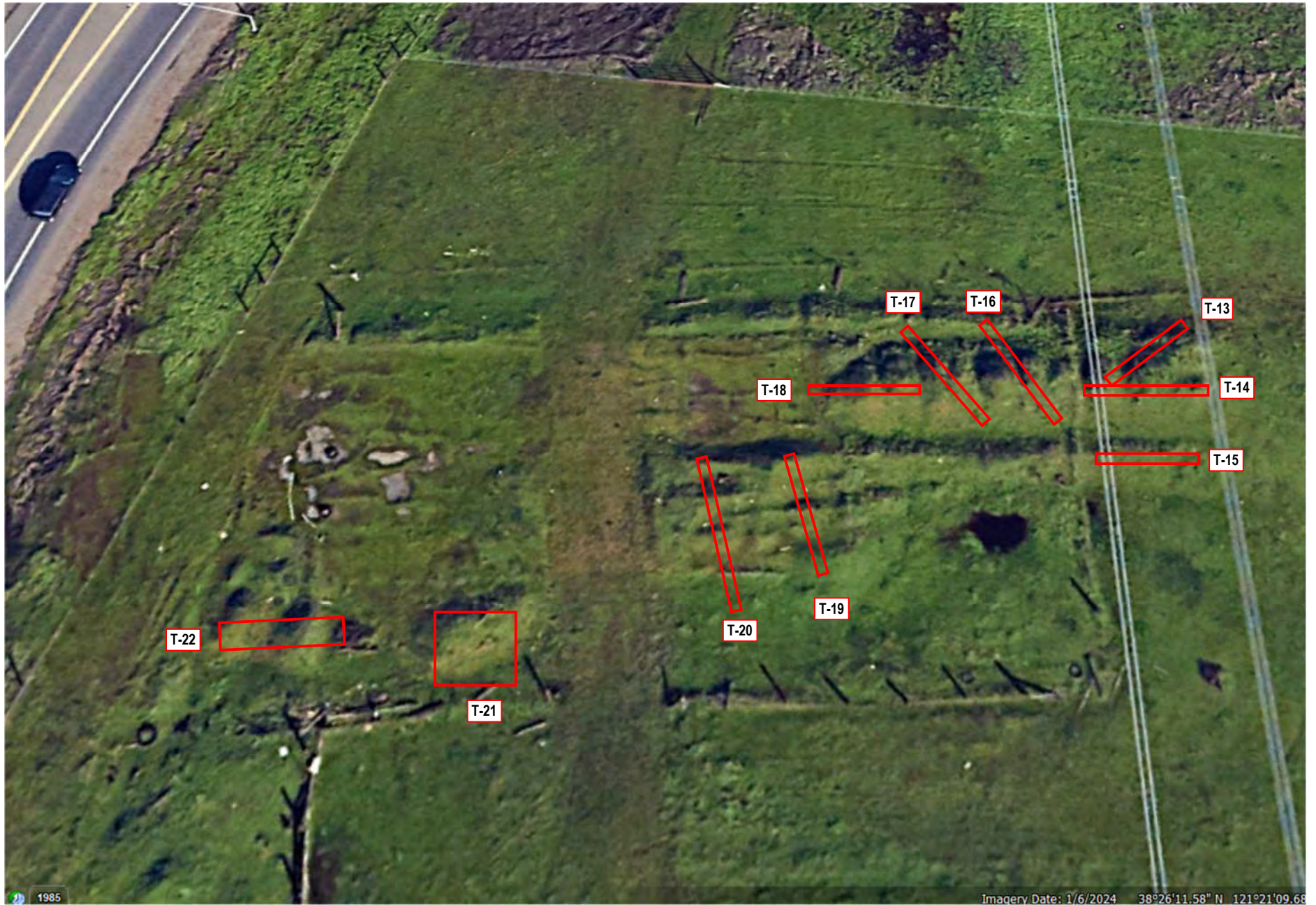


 Trench Location



FIGURE:

2



Western Soil Piles
Summer Villas – 9350 Sheldon Road, Elk Grove, CA



 Trench Location



FIGURE:

3

SITE PHOTOGRAPHS



Photo #1:
Northeastern soil piles (pre
trenching)



Photo #2:
Northeastern soil piles
Exploratory trenches T-1, T-2
(center & left) and T-12 (right)



Photo #3:
Northeastern soil piles
Trench T-1



Photo #4:
Northeastern soil piles
Trench T-2



Photo #5:
Northeastern soil piles
Trench T-3



Photo #6:
Northeastern soil piles
Trench T-4



Photo #7:
Northeastern soil piles
Trench T-5



Photo #8:
Northeastern soil piles
Trench T-6



Photo #9:
Northeastern soil piles
Trench T-7



Photo #10:
Northeastern soil piles
Trench T-8

Northeastern soil piles
Trenches T-8 to T-12
(left to right)



Photo #12:
Northeastern soil piles
Trench T-9



Photo #13:
Northeastern soil piles
Trench T-10



Photo #14:
Northeastern soil piles
Trench T-11



Photo #15:
Northeastern soil piles
Trench T-12



Photo #16:
Western soil piles
Trench T-1



Photo #17:
Western soil piles
Trench T-2



Photo #18:
Western soil piles
Trench T-3



Photo #19:
Western soil piles
Trench T-4



Photo #20:
Western soil piles
Trench T-5



Photo #21:
Western soil piles
Trench T-6



Photo #22:
Western soil piles
Trench T-7



Photo #23:
Western soil piles
Trench T-7 (gravel bottom)



Photo #24:
Western soil piles
Trench T-8



Photo #25:
Western soil piles
Trench T-8 (gravel bottom)



Photo #26:
Western soil piles
Trench T-9 - Concrete, metal
debris (pre-trenching)



Photo #27:
Western soil piles
Trench T-9 - Debris



Photo #28:
Western soil piles
Trench T-9 - Debris

Photo #29:
Western soil piles
Trench T-9 - Bottom of excavation
(5 feet) native soils



Photo #30:
Western soil piles
Trench T-9 - Debris from
excavation, two 55-gallon
drums/trash cans



Photo #31:
Western soil piles
Trench T-9 - Gravel,
concrete debris



Photo #32:
Western soil piles
Trench T-9 - No significant
staining or odor



Photo #33:
Western soil piles
Trench T-9 - No significant
staining or odor

Appendix J

23-5794

9350 Sheldon Road
Elk Grove, CA 95624

Inquiry Number: 7359676.2s
June 09, 2023

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	25
Government Records Searched/Data Currency Tracking	GR-1
 <u>GEOCHECK ADDENDUM</u>	
Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-12
Physical Setting Source Map Findings	A-14
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

9350 SHELDON ROAD
ELK GROVE, CA 95624

COORDINATES

Latitude (North):	38.4350030 - 38° 26' 6.01"
Longitude (West):	121.3492680 - 121° 20' 57.36"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	644077.8
UTM Y (Meters):	4255165.0
Elevation:	53 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12021595 ELK GROVE, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140621
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
9350 SHELDON ROAD
ELK GROVE, CA 95624

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	JOE SILVA AND SONS D	9350 SHELDON	CERS		TP
A2	JOE SILVA AND SONS D	9350 SHELDON	FINDS		TP
A3	JOE SILVA AND SONS D	9350 SHELDON ROAD	ENF, CIWQS		TP
B4	LEO A FASSLER	9529 SHELDON RD	HIST UST, HAZNET, HWTS	Higher	264, 0.050, NE
B5	LEO A. FASSLER	9529 SHELDON RD	SWEEPS UST, CA FID UST, Sacramento Co. ML	Higher	264, 0.050, NE
6	T-MOBILE WEST CORP (	9345 SHELDON RD	Sacramento Co. ML	Higher	699, 0.132, North
7	MAITA TOYOTA WAREHOU	9040 WATERMAN RD	Sacramento Co. ML	Higher	741, 0.140, SSW
8	PICCADILLY FARMS	9589 SHELDON RD	Sacramento Co. ML	Higher	1172, 0.222, ENE
9	FRANKLIN MEADOWS ELE	FIRE POPPY DRIVE/BLO	ENVIROSTOR, SCH	Higher	3083, 0.584, SSW
10	ELK GROVE-MATHER AUX		FUDS	Lower	3965, 0.751, SSE
11	PLEASANT GROVE HI/KA	BOND ROAD/BRADSHAW R	ENVIROSTOR, SCH	Higher	4425, 0.838, SE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
JOE SILVA AND SONS D 9350 SHELDON ELK GROVE, CA 95624	CERS	N/A
JOE SILVA AND SONS D 9350 SHELDON ELK GROVE, CA 95624	FINDS Registry ID:: 110065530125	N/A
JOE SILVA AND SONS D 9350 SHELDON ROAD ELK GROVE, CA 95624	ENF Status: Historical Facility Id: 233810 CIWQS	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL..... National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

EXECUTIVE SUMMARY

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS..... Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG..... RCRA - Large Quantity Generators

RCRA-SQG..... RCRA - Small Quantity Generators

RCRA-VSQG..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List

US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE..... State Response Sites

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Information System

Lists of state and tribal leaking storage tanks

LUST..... Geotracker's Leaking Underground Fuel Tank Report

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

CPS-SLIC..... Statewide SLIC Cases

Sacramento Co. CS..... Toxic Site Clean-Up List

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing

UST..... Active UST Facilities

AST..... Aboveground Petroleum Storage Tank Facilities

INDIAN UST..... Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Cleanup Program Properties

Lists of state and tribal brownfield sites

BROWNFIELDS..... Considered Brownfields Sites Listing

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
CDL..... Clandestine Drug Labs
Toxic Pits..... Toxic Pits Cleanup Act Sites
CERS HAZ WASTE..... CERS HAZ WASTE
US CDL..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CERS TANKS..... California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS..... Environmental Liens Listing
LIENS 2..... CERCLA Lien Information
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act

EXECUTIVE SUMMARY

TRIS.....	Toxic Chemical Release Inventory System
SSTS.....	Section 7 Tracking Systems
ROD.....	Records Of Decision
RMP.....	Risk Management Plans
RAATS.....	RCRA Administrative Action Tracking System
PRP.....	Potentially Responsible Parties
PADS.....	PCB Activity Database System
ICIS.....	Integrated Compliance Information System
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS.....	Material Licensing Tracking System
COAL ASH DOE.....	Steam-Electric Plant Operation Data
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER.....	PCB Transformer Registration Database
RADINFO.....	Radiation Information Database
HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS.....	Incident and Accident Data
CONSENT.....	Superfund (CERCLA) Consent Decrees
INDIAN RESERV.....	Indian Reservations
FUSRAP.....	Formerly Utilized Sites Remedial Action Program
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US MINES.....	Mines Master Index File
ABANDONED MINES.....	Abandoned Mines
UXO.....	Unexploded Ordnance Sites
ECHO.....	Enforcement & Compliance History Information
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
PFAS NPL.....	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES.....	Federal Sites PFAS Information
PFAS TSCA.....	PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST.....	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR.....	PFAS Contamination Site Location Listing
PFAS WQP.....	Ambient Environmental Sampling for PFAS
PFAS NPDES.....	Clean Water Act Discharge Monitoring Information
PFAS ECHO.....	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING.....	Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT.....	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC.....	Aqueous Foam Related Incidents Listing
PFAS.....	PFAS Contamination Site Location Listing
AQUEOUS FOAM.....	Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN.....	Bond Expenditure Plan
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings.....	CUPA Resources List
DRYCLEANERS.....	Cleaner Facilities
EMI.....	Emissions Inventory Data
Financial Assurance.....	Financial Assurance Information Listing
ICE.....	ICE
HIST CORTESE.....	Hazardous Waste & Substance Site List
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
HAZNET.....	Facility and Manifest Data
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing

EXECUTIVE SUMMARY

NPDES.....	NPDES Permits Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
Notify 65.....	Proposition 65 Records
HAZMAT.....	Hazardous Material Facilities
UIC.....	UIC Listing
UIC GEO.....	UIC GEO (GEOTRACKER)
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
WIP.....	Well Investigation Program Case List
MILITARY PRIV SITES.....	MILITARY PRIV SITES (GEOTRACKER)
PROJECT.....	PROJECT (GEOTRACKER)
WDR.....	Waste Discharge Requirements Listing
NON-CASE INFO.....	NON-CASE INFO (GEOTRACKER)
OTHER OIL & GAS.....	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS.....	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT.....	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ.....	Well Stimulation Project (GEOTRACKER)
PFAS TRIS.....	List of PFAS Added to the TRI
MINES MRDS.....	Mineral Resources Data System
HWTS.....	Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/23/2023 has revealed that there are 2 ENVIROSTOR sites within approximately 1 of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FRANKLIN MEADOWS ELE Facility Id: 34000002 Status: No Action Required	FIRE POPPY DRIVE/BLO	SSW 1/2 - 1 (0.584 mi.)	9	16
PLEASANT GROVE HI/KA Facility Id: 34020002 Status: Certified	BOND ROAD/BRADSHAW R	SE 1/2 - 1 (0.838 mi.)	11	20

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 1 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LEO A. FASSLER Status: A Tank Status: A Comp Number: 22822	9529 SHELTON RD	NE 0 - 1/8 (0.050 mi.)	B5	13

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 1 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LEO A FASSLER Facility Id: 00000022822	9529 SHELDON RD	NE 0 - 1/8 (0.050 mi.)	B4	12

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 1 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LEO A. FASSLER Facility Id: 34006987 Status: A	9529 SHELDON RD	NE 0 - 1/8 (0.050 mi.)	B5	13

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 02/01/2023 has revealed that there is 1 FUDS site within approximately 1 of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ELK GROVE-MATHER AUX		SSE 1/2 - 1 (0.751 mi.)	10	19

Sacramento Co. ML: Sacramento County Master List. Any business that has hazardous materials on site - hazardous materials storage sites, underground storage tanks, waste generators.

A review of the Sacramento Co. ML list, as provided by EDR, and dated 11/07/2022 has revealed that there are 4 Sacramento Co. ML sites within approximately 1 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LEO A. FASSLER Facility Status: Inactive. Included on a listing no longer updated.	9529 SHELDON RD	NE 0 - 1/8 (0.050 mi.)	B5	13
T-MOBILE WEST CORP (	9345 SHELDON RD	N 1/8 - 1/4 (0.132 mi.)	6	14
MAITA TOYOTA WAREHOU	9040 WATERMAN RD	SSW 1/8 - 1/4 (0.140 mi.)	7	15
Facility Status: Inactive. Included on a listing no longer updated.				
PICCADILLY FARMS	9589 SHELDON RD	ENE 1/8 - 1/4 (0.222 mi.)	8	15
Facility Status: Inactive. Included on a listing no longer updated.				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

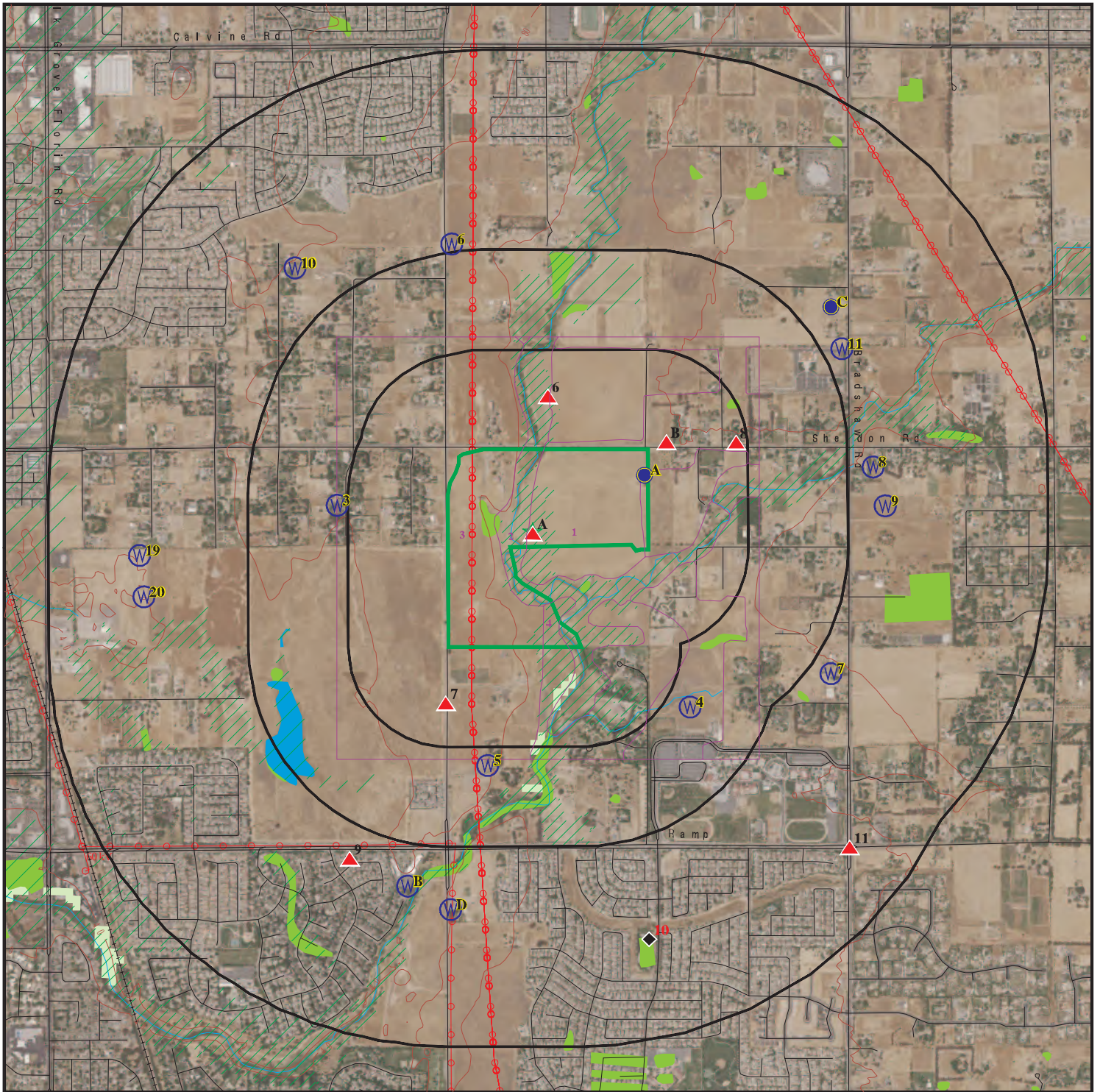
Site Name

KINGSFORD CHARCOAL PLANT
KINGSFORD CHARCOAL COMPANY

Database(s)

Sacramento Co. CS
Sacramento Co. CS

OVERVIEW MAP - 7359676.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

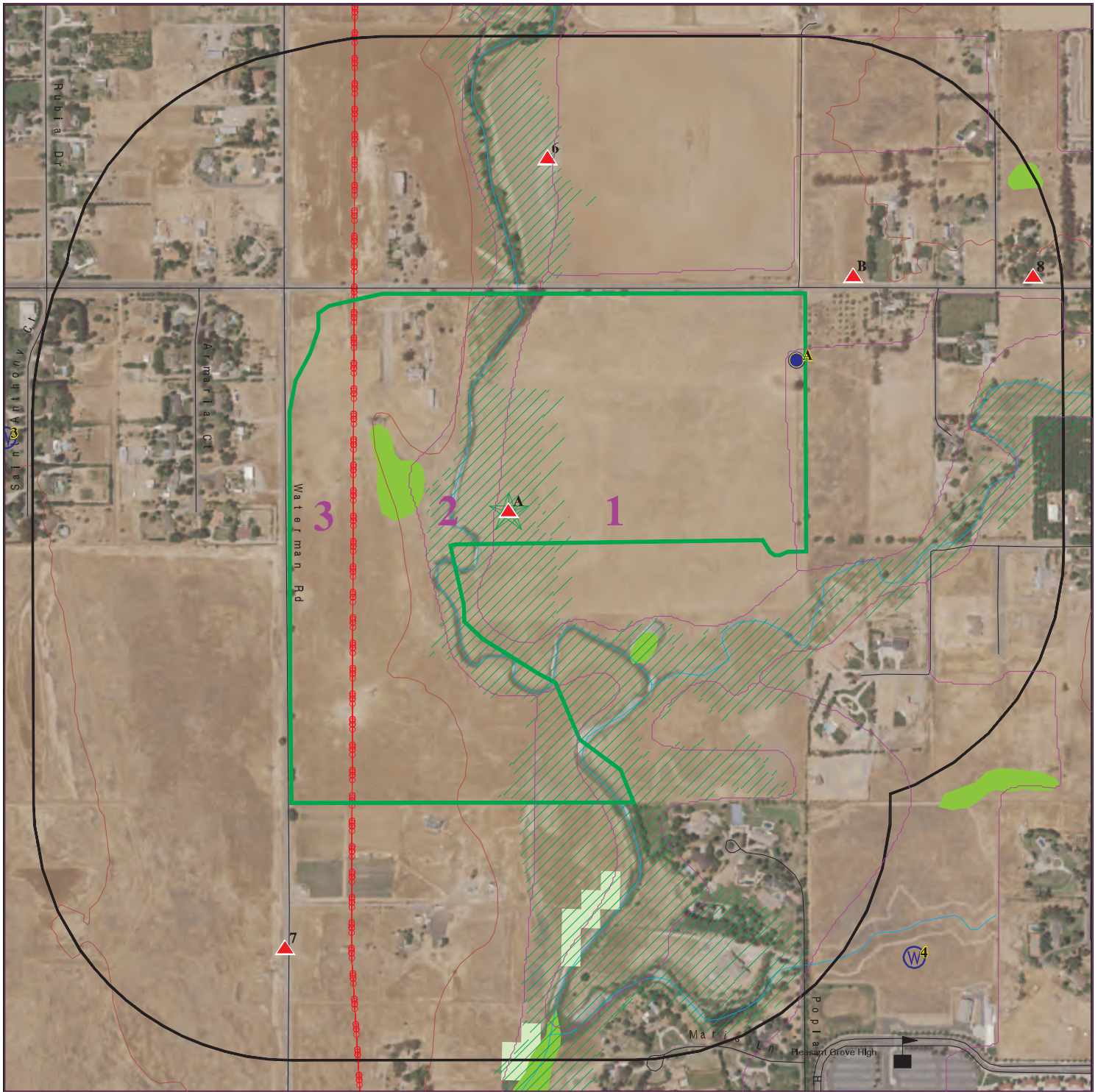
Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 23-5794
ADDRESS: 9350 Sheldon Road
Elk Grove CA 95624
LAT/LONG: 38.435003 / 121.349268

CLIENT: Pinnacle Environmental Inc.
CONTACT: Travis Stansbery
INQUIRY #: 7359676.2s
DATE: June 09, 2023 8:51 am

DETAIL MAP - 7359676.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 23-5794
 ADDRESS: 9350 Sheldon Road
 Elk Grove CA 95624
 LAT/LONG: 38.435003 / 121.349268

CLIENT: Pinnacle Environmental Inc.
 CONTACT: Travis Stansbery
 INQUIRY #: 7359676.2s
 DATE: June 09, 2023 8:52 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Lists of Federal NPL (Superfund) sites</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<i>Lists of Federal Delisted NPL sites</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Lists of Federal sites subject to CERCLA removals and CERCLA orders</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Lists of Federal CERCLA sites with NFRAP</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA facilities undergoing Corrective Action</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Lists of Federal RCRA TSD facilities</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Lists of Federal RCRA generators</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>Lists of state- and tribal (Superfund) equivalent sites</i>								
RESPONSE	1.000		0	0	0	0	NR	0
<i>Lists of state- and tribal hazardous waste facilities</i>								
ENVIROSTOR	1.000		0	0	0	2	NR	2
<i>Lists of state and tribal landfills and solid waste disposal facilities</i>								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<i>Lists of state and tribal leaking storage tanks</i>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Sacramento Co. CS	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal registered storage tanks</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<i>Lists of state and tribal voluntary cleanup sites</i>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<i>Lists of state and tribal brownfield sites</i>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<i>Local Lists of Registered Storage Tanks</i>								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		1	0	NR	NR	NR	1
CA FID UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	1	NR	1
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP	1	NR	NR	NR	NR	NR	1
Financial Assurance	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
Sacramento Co. ML	0.250		1	3	NR	NR	NR	4
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP	1	NR	NR	NR	NR	NR	1
CERS	TP	1	NR	NR	NR	NR	NR	1
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
<u>EDR HIGH RISK HISTORICAL RECORDS</u>								
<i>EDR Exclusive Records</i>								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
<u>EDR RECOVERED GOVERNMENT ARCHIVES</u>								
<i>Exclusive Recovered Govt. Archives</i>								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		4	4	3	0	3	0	14

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A1
Target
Property
JOE SILVA AND SONS DAIRY
9350 SHELTON
ELK GROVE, CA 95624

CERS **S121761233**
N/A

Site 1 of 3 in cluster A

Actual:
53 ft.

CERS:
Name: JOE SILVA AND SONS DAIRY
Address: 9350 SHELTON
City,State,Zip: ELK GROVE, CA 95624
Site ID: 318431
CERS ID: 233810
CERS Description: Animal Wastewater Discharge

Enforcement Action:
Site ID: 318431
Site Name: Joe Silva and Sons Dairy
Site Address: 9350 SHELTON
Site City: ELK GROVE
Site Zip: 95624
Enf Action Date: 06-22-1990
Enf Action Type: Administrative Enforcement with Penalty
Enf Action Description: Administrative Enforcement with Civil Liability (Penalty)
Enf Action Notes: Not reported
Enf Action Division: Water Boards
Enf Action Program: UNSPEC
Enf Action Source: CIWQS,

A2
Target
Property
JOE SILVA AND SONS DAIRY
9350 SHELTON
ELK GROVE, CA 95624

FINDS **1023263540**
N/A

Site 2 of 3 in cluster A

Actual:
53 ft.

FINDS:
Registry ID: 110065530125

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
STATE MASTER

[Click this hyperlink](#) while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.

A3
Target
Property
JOE SILVA AND SONS DAIRY
9350 SHELTON ROAD
ELK GROVE, CA 95624

ENF **S120714028**
CIWQS **N/A**

Site 3 of 3 in cluster A

Actual:
53 ft.

ENF:
Name: JOE SILVA AND SONS DAIRY
Address: 9350 SHELTON ROAD
City,State,Zip: ELK GROVE, CA
Region: Not reported
Facility Id: 233810
Agency Name: Not reported
Place Type: Growing

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JOE SILVA AND SONS DAIRY (Continued)

S120714028

Place Subtype:	Animal Feeding
Facility Type:	Agricultural
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	38.43501
Place Longitude:	-121.34929
SIC Code 1:	241
SIC Desc 1:	Dairy Farms
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	WDR
# Of Programs:	Not reported
WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JOE SILVA AND SONS DAIRY (Continued)

S120714028

Fee Code:	Not reported
Direction/Voice:	Not reported
Enforcement Id(EID):	223703
Region:	Not reported
Order / Resolution Number:	R5-1990-0199
Enforcement Action Type:	Admin Civil Liability
Effective Date:	06/22/1990
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	09/16/1991
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	ACL R5-1990-0199 for Silva and Sons, Joe
Description:	DISCHARGES OF WASTEWATER AND CORRAL RUNOFF IN VIOLATION OF WDR.
Program:	WDR
Latest Milestone Completion Date:	9/16/1991
# Of Programs1:	1
Total Assessment Amount:	12500
Initial Assessed Amount:	0
Liability \$ Amount:	12500
Project \$ Amount:	0
Liability \$ Paid:	12500
Project \$ Completed:	0
Total \$ Paid/Completed Amount:	12500

CIWQS:

Name:	JOE SILVA AND SONS DAIRY
Address:	9350 SHELDON ROAD
City,State,Zip:	ELK GROVE, CA 95624
Agency:	Joe Silva & Sons
Agency Address:	9350 Sheldon Road, Elk Grove, CA 95624
Place/Project Type:	Animal Feeding Facility
SIC/NAICS:	241
Region:	5S
Program:	ANIWSTCOWS, WDR
Regulatory Measure Status:	Historical
Regulatory Measure Type:	WDR
Order Number:	95-27209
WDID:	5B345003001
NPDES Number:	Not reported
Adoption Date:	12/08/1995
Effective Date:	12/08/1995
Termination Date:	06/21/2005
Expiration/Review Date:	12/08/1995
Design Flow:	0
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	0
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	38.43501
Longitude:	-121.34929

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

Database(s)

B4
NE
< 1/8
0.050 mi.
264 ft.
Site 1 of 2 in cluster B

HIST UST
HAZNET
HWTS
U001612796
N/A

Relative:
Higher

Actual:
59 ft.

HIST UST:
Name: LEO A FASSLER
Address: 9529 SHELTON RD
City,State,Zip: ELK GROVE, CA 95629
File Number: 0001fecd
URL: <https://documents.geotracker.waterboards.ca.gov/ustpdfs/pdf/0001fecd.pdf>
Region: STATE
Facility ID: 00000022822
Facility Type: Other
Other Type: FARM
Contact Name: OWNER
Telephone: 9166822718
Owner Name: LEO A. FASSLER
Owner Address: 9529 SHELTON RD.
Owner City,St,Zip: ELK GROVE, CA 95624
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00000400
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: 1/4"
Leak Detection: Visual

[Click here for Geo Tracker PDF:](#)

HAZNET:

Name: LESLIE MORRIS
Address: 9529 SHELTON ROAD
Address 2: Not reported
City,State,Zip: ELK GROVE, CA 95624
Contact: LESLIE MORRIS
Telephone: 9165991618
Mailing Name: Not reported
Mailing Address: 9529 SHELTON ROAD

Year: 2016
Gepaid: CAC002878679
TSD EPA ID: CAD982042475
CA Waste Code: 151 - Asbestos containing waste
Disposal Method: H132 - Landfill Or Surface Impoundment That Will Be Closed As
Landfill(To Include On-Site Treatment And/Or Stabilization)

Tons: 0.23

HWTS:

Name: LESLIE MORRIS
Address: 9529 SHELTON ROAD
Address 2: Not reported
City,State,Zip: ELK GROVE, CA 95624

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LEO A FASSLER (Continued)

U001612796

EPA ID: CAC002878679
Inactive Date: 12/21/2016
Create Date: 09/20/2016
Last Act Date: Not reported
Mailing Name: Not reported
Mailing Address: 9529 SHELDON ROAD
Mailing Address 2: Not reported
Mailing City,State,Zip: ELK GROVE, CA 95624
Owner Name: LESLIE MORRIS
Owner Address: 9529 SHELDON ROAD
Owner Address 2: Not reported
Owner City,State,Zip: ELK GROVE, CA 95624
Contact Name: LESLIE MORRIS
Contact Address: 9529 SHELDON ROAD
Contact Address 2: Not reported
City,State,Zip: ELK GROVE, CA 95624
Facility Status: Inactive
Facility Type: TEMPORARY
Category: STATE
Latitude: -90
Longitude: 180

B5
NE
< 1/8
0.050 mi.
264 ft.

LEO A. FASSLER
9529 SHELDON RD
ELK GROVE, CA 95624
Site 2 of 2 in cluster B

SWEEPS UST **S101627792**
CA FID UST **N/A**
Sacramento Co. ML

Relative:
Higher
Actual:
59 ft.

SWEEPS UST:
Name: LEO A. FASSLER
Address: 9529 SHELDON RD
City: ELK GROVE
Status: Active
Comp Number: 22822
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 34-000-022822-000001
Tank Status: A
Capacity: 400
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: 1

CA FID UST:
Facility ID: 34006987
Regulated By: UTNKA
Regulated ID: 00022822
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 9166822718
Mail To: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LEO A. FASSLER (Continued)

S101627792

Mailing Address: 9529 SHELDON RD
Mailing Address 2: Not reported
Mailing City,St,Zip: ELK GROVE 95624
Contact: Not reported
Contact Phone: Not reported
DUNS Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

Sacramento Co. ML:

Name: L.A. FASSLER
Address: 9529 SHELDON RD
City,State,Zip: ELK GROVE, CA 95624
Facility Id: Not reported
Facility Status: Inactive. Included on a listing no longer updated.
FD: G
Billing Codes BP: Farm-No Fee
Billing Codes UST: Farm-No Fee
WG Bill Code: Farm-No Fee
Target Property Bill Cod: 53
Food Bill Code: 53
CUPA Permit Date: Not reported
HAZMAT Permit Date: Not reported
HAZMAT Inspection Date: Not reported
Hazmat Date BP Received: Not reported
UST Permit Dt: Not reported
UST Inspection Date: Not reported
UST Tank Test Date: Not reported
Number of Tanks: 1
UST Tank Test Date: Not reported
SIC Code: Not reported
Tier Permitting: Not reported
AST Bill Code: Not reported
CALARP Bill Code: Not reported

6
North
1/8-1/4
0.132 mi.
699 ft.

T-MOBILE WEST CORP (SC06855A)
9345 SHELDON RD
ELK GROVE, CA 95624

Sacramento Co. ML S110041481
N/A

Relative:
Higher

Sacramento Co. ML:

Actual:
57 ft.

Name: T-MOBILE WEST CORP (SC06855A)
Address: 9345 SHELDON RD
City,State,Zip: ELK GROVE, CA 95624
Facility Id: Not reported
Facility Status: Not reported
FD: Not reported
Billing Codes BP: I
Billing Codes UST: Not reported
WG Bill Code: Not reported
Target Property Bill Cod: Not reported
Food Bill Code: Not reported
CUPA Permit Date: Not reported
HAZMAT Permit Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

T-MOBILE WEST CORP (SC06855A) (Continued)

S110041481

HAZMAT Inspection Date: Not reported
Hazmat Date BP Received: Not reported
UST Permit Dt: Not reported
UST Inspection Date: Not reported
UST Tank Test Date: Not reported
Number of Tanks: Not reported
UST Tank Test Date: Not reported
SIC Code: Not reported
Tier Permitting: Not reported
AST Bill Code: Not reported
CALARP Bill Code: Not reported

7
SSW
1/8-1/4
0.140 mi.
741 ft.

MAITA TOYOTA WAREHOUSE
9040 WATERMAN RD
ELK GROVE, CA 95624

Sacramento Co. ML

S105808912
N/A

Relative:
Higher

Sacramento Co. ML:

Actual:
67 ft.

Name: MAITA TOYOTA WAREHOUSE
Address: 9040 WATERMAN RD
City,State,Zip: ELK GROVE, CA 95624
Facility Id: Not reported
Facility Status: Inactive. Included on a listing no longer updated.
FD: Not reported
Billing Codes BP: Disclaimer
Billing Codes UST: No Tanks
WG Bill Code: Oil Changed by Outside Company-No Fee
Target Property Bill Cod: 50
Food Bill Code: 50
CUPA Permit Date: Not reported
HAZMAT Permit Date: Not reported
HAZMAT Inspection Date: Not reported
Hazmat Date BP Received: Not reported
UST Permit Dt: Not reported
UST Inspection Date: Not reported
UST Tank Test Date: Not reported
Number of Tanks: 0
UST Tank Test Date: Not reported
SIC Code: Not reported
Tier Permitting: Not reported
AST Bill Code: Not reported
CALARP Bill Code: Not reported

8
ENE
1/8-1/4
0.222 mi.
1172 ft.

PICCADILLY FARMS
9589 SHELDON RD
ELK GROVE, CA 95624

Sacramento Co. ML

S105808208
N/A

Relative:
Higher

Sacramento Co. ML:

Actual:
59 ft.

Name: PICCADILLY FARMS
Address: 9589 SHELDON RD
City,State,Zip: ELK GROVE, CA 95624
Facility Id: Not reported
Facility Status: Inactive. Included on a listing no longer updated.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PICCADILLY FARMS (Continued)

S105808208

FD: G
Billing Codes BP: Disclaimer
Billing Codes UST: No Tanks
WG Bill Code: Oil Changed by Outside Company-No Fee
Target Property Bill Cod: 50
Food Bill Code: 50
CUPA Permit Date: Not reported
HAZMAT Permit Date: Not reported
HAZMAT Inspection Date: Not reported
Hazmat Date BP Received: Not reported
UST Permit Dt: Not reported
UST Inspection Date: Not reported
UST Tank Test Date: Not reported
Number of Tanks: 0
UST Tank Test Date: Not reported
SIC Code: Not reported
Tier Permitting: Not reported
AST Bill Code: Not reported
CALARP Bill Code: Not reported

9
SSW
1/2-1
0.584 mi.
3083 ft.

FRANKLIN MEADOWS ELEM SCHOOL NO. 37
FIRE POPPY DRIVE/BLOSSOM RANCH DRIVE
ELK GROVE, CA 95624

ENVIROSTOR S118756760
SCH N/A

Relative:
Higher
Actual:
55 ft.

ENVIROSTOR:
Name: FRANKLIN MEADOWS ELEM SCHOOL NO. 37
Address: FIRE POPPY DRIVE/BLOSSOM RANCH DRIVE
City,State,Zip: ELK GROVE, CA 95624
Facility ID: 34000002
Status: No Action Required
Status Date: 03/19/2002
Site Code: 104259
Site Type: School Investigation
Site Type Detailed: School
Acres: 11.5
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 09
Senate: 06
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 38.4232
Longitude: -121.3577
APN: NONE SPECIFIED
Past Use: NONE
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: ELK GROVE USD
Alias Type: Alternate Name

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRANKLIN MEADOWS ELEM SCHOOL NO. 37 (Continued)

S118756760

Alias Name: ELK GROVE USD-FRANKLIN MEADOWS ELEM # 37
Alias Type: Alternate Name
Alias Name: FRANKLIN MEADOWS ELEMENTARY SCHOOL #37
Alias Type: Alternate Name
Alias Name: 104259
Alias Type: Project Code (Site Code)
Alias Name: 34000002
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/18/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 05/15/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 03/19/2002
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: FRANKLIN MEADOWS ELEM SCHOOL NO. 37
Address: FIRE POPPY DRIVE/BLOSSOM RANCH DRIVE
City,State,Zip: ELK GROVE, CA 95624
Facility ID: 34000002
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 11.5
National Priorities List: NO
Cleanup Oversight Agencies: DTSC
Lead Agency: DTSC
Lead Agency Description: * DTSC
Project Manager: Not reported
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 104259
Assembly: 09

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRANKLIN MEADOWS ELEM SCHOOL NO. 37 (Continued)

S118756760

Senate: 06
Special Program Status: Not reported
Status: No Action Required
Status Date: 03/19/2002
Restricted Use: NO
Funding: School District
Latitude: 38.4232
Longitude: -121.3577
APN: NONE SPECIFIED
Past Use: NONE
Potential COC: NONE SPECIFIED, No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: ELK GROVE USD
Alias Type: Alternate Name
Alias Name: ELK GROVE USD-FRANKLIN MEADOWS ELEM # 37
Alias Type: Alternate Name
Alias Name: FRANKLIN MEADOWS ELEMENTARY SCHOOL #37
Alias Type: Alternate Name
Alias Name: 104259
Alias Type: Project Code (Site Code)
Alias Name: 34000002
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/18/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 05/15/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 03/19/2002
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

10
SSE
1/2-1
0.751 mi.
3965 ft.

ELK GROVE-MATHER AUXILIARY FIELD NO. 5

FUDS 1024903732
N/A

ELK GROVE, CA

Relative:
Lower

Actual:
52 ft.

FUDS:

EPA Region: 09
Installation ID: CA99799F573700
Congressional District Number: 7
Name: ELK GROVE-MATHER AUXILIARY FIELD NO. 5
FUDS Number: J09CA0797
City: ELK GROVE
State: CA
County: SACRAMENTO
Object ID: 10051
USACE Division: SPD
USACE District: Sacramento District (SPK)
Status: Properties without projects
Current Owner: Not reported
EMS Map Link: <https://fudportal.usace.army.mil/ems/inventory/map?id=57494>
Eligibility: Ineligible
Has Projects: No
NPL Status: Not reported
Project Required: No
Feature Description: Prior to DoD use, the Site was used for agricultural purposes. On 27 July 1942, the War Department authorized the acquisition of a quarter-section (160 acres) tract in order to establish an auxiliary airfield to Mather Army Airfield. The acquisition of an additional 7.4 acres was authorized on 2 November 1942. Plans to construct an all weather (i.e., paved) 2,200-foot by 2,500-foot auxiliary field were approved on 21 November 1942. However, these plans were cancelled on 9 December 1942 because the Site was not large enough to support double engine flight training, and requests were made for use of an alternate field to take the place of Elk Grove-Mather Auxiliary Field Number 5. The acquisition of the Site became final on 22 December 1942. On 30 April 1943, the Commanding General of the Army Air Forces made the determination that the Site was no longer needed to support operations at Mather Army Airfield. On 28 March 1944, fee title to the property was reverted, and the Site was returned to the original owners along with monetary compensation for crop damages incurred during DoD use. No as-built maps, building inventories, or any aerial photographs indicating improvements made by the DoD to the Site were found during records research. It appears the Site was minimally used, if at all, by the DoD. After the DoD vacated the Site in 1944, it was again used for agricultural purposes. During the mid-1990s, the Site underwent extensive development and currently is the location of over 400 privately- owned tract homes. A 5-acre irrigation water holding pond and approximately 14 acres of low-flow drainage ditches have existed on-Site since the 1970s.
Latitude: 38.42027778
Longitude: -121.34388889

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

11
SE
1/2-1
0.838 mi.
4425 ft.

PLEASANT GROVE HI/KATHERINE ALBIANI MID
BOND ROAD/BRADSHAW ROAD
ELK GROVE, CA 95624

ENVIROSTOR S105628811
SCH N/A

Relative:
Higher

Actual:
59 ft.

ENVIROSTOR:

Name: PLEASANT GROVE HI/KATHERINE ALBIANI MID
Address: BOND ROAD/BRADSHAW ROAD
City,State,Zip: ELK GROVE, CA 95624
Facility ID: 34020002
Status: Certified
Status Date: 11/07/2003
Site Code: 104163
Site Type: School Cleanup
Site Type Detailed: School
Acres: 107
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 09
Senate: 06
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 38.42582
Longitude: -121.3392
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - LIVESTOCK
Potential COC: Lead Polychlorinated biphenyls (PCBs)
Confirmed COC: Polychlorinated biphenyls (PCBs Lead
Potential Description: SOIL
Alias Name: ELK GROVE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: ELK GROVE USD-PLSNT GRV HS/K ALBIANI MS
Alias Type: Alternate Name
Alias Name: ELK GROVE USD-PLSNT GRV HS/K. ALBIANI MS
Alias Type: Alternate Name
Alias Name: HIGH/MIDDLE SCHOOL #8
Alias Type: Alternate Name
Alias Name: PLEASANT GROVE HI/KATHERINE ALBIANI MID
Alias Type: Alternate Name
Alias Name: 110033611606
Alias Type: EPA (FRS #)
Alias Name: 104148
Alias Type: Project Code (Site Code)
Alias Name: 104163
Alias Type: Project Code (Site Code)
Alias Name: 34020002
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/26/2001

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PLEASANT GROVE HI/KATHERINE ALBIANI MID (Continued)

S105628811

Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Standard Voluntary Agreement
Completed Date:	03/07/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	02/20/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	05/18/2015
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	06/26/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	08/11/2000
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	05/21/2004
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	11/07/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	03/05/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	05/21/2004
Comments:	Issued Certification package and letter.
Completed Area Name:	PROJECT WIDE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PLEASANT GROVE HI/KATHERINE ALBIANI MID (Continued)

S105628811

Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/08/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 04/18/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Public Participation
Completed Date: 10/21/2003
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: PLEASANT GROVE HI/KATHERINE ALBIANI MID
Address: BOND ROAD/BRADSHAW ROAD
City,State,Zip: ELK GROVE, CA 95624
Facility ID: 34020002
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 107
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 104163
Assembly: 09
Senate: 06
Special Program Status: Not reported
Status: Certified
Status Date: 11/07/2003
Restricted Use: NO
Funding: School District
Latitude: 38.42582
Longitude: -121.3392
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - LIVESTOCK
Potential COC: Lead, Polychlorinated biphenyls (PCBs)

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PLEASANT GROVE HI/KATHERINE ALBIANI MID (Continued)

S105628811

Confirmed COC: Polychlorinated biphenyls (PCBs, Lead
Potential Description: SOIL
Alias Name: ELK GROVE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: ELK GROVE USD-PLSNT GRV HS/K ALBIANI MS
Alias Type: Alternate Name
Alias Name: ELK GROVE USD-PLSNT GRV HS/K. ALBIANI MS
Alias Type: Alternate Name
Alias Name: HIGH/MIDDLE SCHOOL #8
Alias Type: Alternate Name
Alias Name: PLEASANT GROVE HI/KATHERINE ALBIANI MID
Alias Type: Alternate Name
Alias Name: 110033611606
Alias Type: EPA (FRS #)
Alias Name: 104148
Alias Type: Project Code (Site Code)
Alias Name: 104163
Alias Type: Project Code (Site Code)
Alias Name: 34020002
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/26/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Standard Voluntary Agreement
Completed Date: 03/07/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/20/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 05/18/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/26/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 08/11/2000
Comments: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PLEASANT GROVE HI/KATHERINE ALBIANI MID (Continued)

S105628811

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 05/21/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 11/07/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 03/05/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 05/21/2004
Comments: Issued Certification package and letter.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/08/2004
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 04/18/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Public Participation
Completed Date: 10/21/2003
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ELK GROVE	S106782303	KINGSFORD CHARCOAL PLANT	WATERMAN RD		Sacramento Co. CS
ELK GROVE	S106782302	KINGSFORD CHARCOAL COMPANY	WATERMAN RD		Sacramento Co. CS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2023	Source: EPA
Date Data Arrived at EDR: 05/02/2023	Telephone: N/A
Date Made Active in Reports: 05/17/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/10/2023
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2023	Source: EPA
Date Data Arrived at EDR: 05/02/2023	Telephone: N/A
Date Made Active in Reports: 05/17/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/10/2023
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: N/A
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2023
Date Data Arrived at EDR: 03/28/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/28/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/26/2023	Source: EPA
Date Data Arrived at EDR: 05/02/2023	Telephone: 800-424-9346
Date Made Active in Reports: 05/17/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 15	Next Scheduled EDR Contact: 07/24/2023
	Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/06/2023	Source: EPA
Date Data Arrived at EDR: 03/09/2023	Telephone: 800-424-9346
Date Made Active in Reports: 03/20/2023	Last EDR Contact: 03/09/2023
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/06/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2023	Telephone: (415) 495-8895
Date Made Active in Reports: 03/20/2023	Last EDR Contact: 03/09/2023
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2023	Telephone: (415) 495-8895
Date Made Active in Reports: 03/20/2023	Last EDR Contact: 03/09/2023
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/06/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2023	Telephone: (415) 495-8895
Date Made Active in Reports: 03/20/2023	Last EDR Contact: 03/09/2023
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/06/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/09/2023	Telephone: (415) 495-8895
Date Made Active in Reports: 03/20/2023	Last EDR Contact: 03/09/2023
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/08/2023	Source: Department of the Navy
Date Data Arrived at EDR: 02/09/2023	Telephone: 843-820-7326
Date Made Active in Reports: 05/02/2023	Last EDR Contact: 05/23/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 08/21/2023
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/20/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/21/2023	Telephone: 703-603-0695
Date Made Active in Reports: 05/02/2023	Last EDR Contact: 05/23/2023
Number of Days to Update: 70	Next Scheduled EDR Contact: 09/04/2023
	Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/20/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/21/2023	Telephone: 703-603-0695
Date Made Active in Reports: 05/02/2023	Last EDR Contact: 05/23/2023
Number of Days to Update: 70	Next Scheduled EDR Contact: 09/04/2023
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/20/2023

Date Data Arrived at EDR: 03/21/2023

Date Made Active in Reports: 05/30/2023

Number of Days to Update: 70

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 03/21/2023

Next Scheduled EDR Contact: 07/03/2023

Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity.

These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/23/2023

Date Data Arrived at EDR: 01/24/2023

Date Made Active in Reports: 04/10/2023

Number of Days to Update: 76

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Last EDR Contact: 04/25/2023

Next Scheduled EDR Contact: 08/07/2023

Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/23/2023

Date Data Arrived at EDR: 01/24/2023

Date Made Active in Reports: 04/10/2023

Number of Days to Update: 76

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Last EDR Contact: 04/25/2023

Next Scheduled EDR Contact: 08/07/2023

Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/06/2023

Date Data Arrived at EDR: 02/07/2023

Date Made Active in Reports: 04/26/2023

Number of Days to Update: 78

Source: Department of Resources Recycling and Recovery

Telephone: 916-341-6320

Last EDR Contact: 05/08/2023

Next Scheduled EDR Contact: 08/21/2023

Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001	Source: California Regional Water Quality Control Board North Coast (1)
Date Data Arrived at EDR: 02/28/2001	Telephone: 707-570-3769
Date Made Active in Reports: 03/29/2001	Last EDR Contact: 08/01/2011
Number of Days to Update: 29	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005	Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Date Data Arrived at EDR: 06/07/2005	Telephone: 760-241-7365
Date Made Active in Reports: 06/29/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 22	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: see region list
Date Made Active in Reports: 03/30/2023	Last EDR Contact: 06/05/2023
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003	Source: California Regional Water Quality Control Board Lahontan Region (6)
Date Data Arrived at EDR: 09/10/2003	Telephone: 530-542-5572
Date Made Active in Reports: 10/07/2003	Last EDR Contact: 09/12/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 04/23/2001	Telephone: 858-637-5595
Date Made Active in Reports: 05/21/2001	Last EDR Contact: 09/26/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 01/09/2012
	Data Release Frequency: No Update Planned

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/23/2022	Source: EPA Region 6
Date Data Arrived at EDR: 12/06/2022	Telephone: 214-665-6597
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/08/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 134

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/26/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/06/2023

Date Data Arrived at EDR: 03/07/2023

Date Made Active in Reports: 03/31/2023

Number of Days to Update: 24

Source: State Water Resources Control Board

Telephone: 866-480-1028

Last EDR Contact: 06/05/2023

Next Scheduled EDR Contact: 09/18/2023

Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003

Date Data Arrived at EDR: 04/07/2003

Date Made Active in Reports: 04/25/2003

Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)

Telephone: 707-576-2220

Last EDR Contact: 08/01/2011

Next Scheduled EDR Contact: 11/14/2011

Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004

Date Data Arrived at EDR: 10/20/2004

Date Made Active in Reports: 11/19/2004

Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)

Telephone: 510-286-0457

Last EDR Contact: 09/19/2011

Next Scheduled EDR Contact: 01/02/2012

Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006

Date Data Arrived at EDR: 05/18/2006

Date Made Active in Reports: 06/15/2006

Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)

Telephone: 805-549-3147

Last EDR Contact: 07/18/2011

Next Scheduled EDR Contact: 10/31/2011

Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004

Date Data Arrived at EDR: 11/18/2004

Date Made Active in Reports: 01/04/2005

Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)

Telephone: 213-576-6600

Last EDR Contact: 07/01/2011

Next Scheduled EDR Contact: 10/17/2011

Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005

Date Data Arrived at EDR: 04/05/2005

Date Made Active in Reports: 04/21/2005

Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)

Telephone: 916-464-3291

Last EDR Contact: 09/12/2011

Next Scheduled EDR Contact: 12/26/2011

Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 82

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/24/2023
Number of Days to Update: 78

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 02/23/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/26/2023
Number of Days to Update: 80

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/23/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/14/2022
Date Data Arrived at EDR: 12/06/2022
Date Made Active in Reports: 03/03/2023
Number of Days to Update: 87

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/09/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/23/2022	Source: EPA Region 10
Date Data Arrived at EDR: 12/06/2022	Telephone: 206-553-2857
Date Made Active in Reports: 04/19/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 134	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/23/2022	Source: EPA Region 4
Date Data Arrived at EDR: 12/06/2022	Telephone: 404-562-9424
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/19/2022	Source: EPA, Region 1
Date Data Arrived at EDR: 12/06/2022	Telephone: 617-918-1313
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/23/2022	Source: EPA Region 9
Date Data Arrived at EDR: 12/06/2022	Telephone: 415-972-3368
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/23/2022	Source: EPA Region 8
Date Data Arrived at EDR: 12/06/2022	Telephone: 303-312-6137
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/14/2022	Source: EPA Region 7
Date Data Arrived at EDR: 12/06/2022	Telephone: 913-551-7003
Date Made Active in Reports: 03/03/2023	Last EDR Contact: 05/09/2023
Number of Days to Update: 87	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/17/2023
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 07/08/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/23/2023	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/24/2023	Telephone: 916-323-3400
Date Made Active in Reports: 04/10/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 76	Next Scheduled EDR Contact: 08/07/2023
	Data Release Frequency: Quarterly

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfields Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/20/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/21/2023	Telephone: 916-323-7905
Date Made Active in Reports: 06/06/2023	Last EDR Contact: 03/21/2023
Number of Days to Update: 77	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 04/06/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/13/2023	Telephone: 202-566-2777
Date Made Active in Reports: 04/19/2023	Last EDR Contact: 06/08/2023
Number of Days to Update: 6	Next Scheduled EDR Contact: 09/25/2023
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/24/2023
Number of Days to Update: 78

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/13/2023
Number of Days to Update: 83

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/31/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014

Date Data Arrived at EDR: 08/06/2014

Date Made Active in Reports: 01/29/2015

Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service

Telephone: 301-443-1452

Last EDR Contact: 04/27/2023

Next Scheduled EDR Contact: 08/07/2023

Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/06/2023

Date Data Arrived at EDR: 02/02/2023

Date Made Active in Reports: 02/10/2023

Number of Days to Update: 8

Source: Drug Enforcement Administration

Telephone: 202-307-1000

Last EDR Contact: 05/23/2023

Next Scheduled EDR Contact: 09/04/2023

Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005

Date Data Arrived at EDR: 08/03/2006

Date Made Active in Reports: 08/24/2006

Number of Days to Update: 21

Source: Department of Toxic Substance Control

Telephone: 916-323-3400

Last EDR Contact: 02/23/2009

Next Scheduled EDR Contact: 05/25/2009

Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/23/2023

Date Data Arrived at EDR: 01/24/2023

Date Made Active in Reports: 04/10/2023

Number of Days to Update: 76

Source: Department of Toxic Substances Control

Telephone: 916-323-3400

Last EDR Contact: 04/25/2023

Next Scheduled EDR Contact: 08/07/2023

Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2020

Date Data Arrived at EDR: 11/30/2022

Date Made Active in Reports: 02/09/2023

Number of Days to Update: 71

Source: Department of Toxic Substances Control

Telephone: 916-255-6504

Last EDR Contact: 06/06/2023

Next Scheduled EDR Contact: 08/14/2023

Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/05/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/11/2023
Number of Days to Update: 5

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 8

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 02/03/2023
Date Data Arrived at EDR: 02/07/2023
Date Made Active in Reports: 04/25/2023
Number of Days to Update: 77

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 01/06/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/11/2023
Number of Days to Update: 5

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/23/2023
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 03/23/2023
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 78

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/19/2023	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 03/21/2023	Telephone: 202-366-4555
Date Made Active in Reports: 05/30/2023	Last EDR Contact: 03/21/2023
Number of Days to Update: 70	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 08/02/2022	Source: Office of Emergency Services
Date Data Arrived at EDR: 10/17/2022	Telephone: 916-845-8400
Date Made Active in Reports: 01/04/2023	Last EDR Contact: 04/20/2023
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/06/2023	Source: State Water Quality Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 866-480-1028
Date Made Active in Reports: 03/30/2023	Last EDR Contact: 06/05/2023
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 866-480-1028
Date Made Active in Reports: 03/31/2023	Last EDR Contact: 06/05/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 02/01/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 77

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/16/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/11/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/03/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/13/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/21/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 05/01/2023
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/14/2023
	Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/08/2018	Telephone: 703-308-4044
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 05/04/2023
Number of Days to Update: 73	Next Scheduled EDR Contact: 08/14/2023
	Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020	Source: EPA
Date Data Arrived at EDR: 06/14/2022	Telephone: 202-260-5521
Date Made Active in Reports: 03/24/2023	Last EDR Contact: 03/13/2023
Number of Days to Update: 283	Next Scheduled EDR Contact: 06/26/2023
	Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2021	Source: EPA
Date Data Arrived at EDR: 02/16/2023	Telephone: 202-566-0250
Date Made Active in Reports: 05/02/2023	Last EDR Contact: 05/19/2023
Number of Days to Update: 75	Next Scheduled EDR Contact: 08/28/2023
	Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/17/2023	Source: EPA
Date Data Arrived at EDR: 01/18/2023	Telephone: 202-564-4203
Date Made Active in Reports: 04/19/2023	Last EDR Contact: 04/18/2023
Number of Days to Update: 91	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/03/2022
Date Data Arrived at EDR: 01/04/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 89

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/04/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 03/29/2023
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/17/2023
	Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/15/2023	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 03/21/2023	Telephone: 301-415-7169
Date Made Active in Reports: 05/30/2023	Last EDR Contact: 04/13/2023
Number of Days to Update: 70	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020	Source: Department of Energy
Date Data Arrived at EDR: 11/30/2021	Telephone: 202-586-8719
Date Made Active in Reports: 02/22/2022	Last EDR Contact: 05/25/2023
Number of Days to Update: 84	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: N/A
Date Made Active in Reports: 11/11/2019	Last EDR Contact: 05/25/2023
Number of Days to Update: 251	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/06/2019	Telephone: 202-566-0517
Date Made Active in Reports: 02/10/2020	Last EDR Contact: 05/04/2023
Number of Days to Update: 96	Next Scheduled EDR Contact: 08/14/2023
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/01/2019	Telephone: 202-343-9775
Date Made Active in Reports: 09/23/2019	Last EDR Contact: 03/23/2023
Number of Days to Update: 84	Next Scheduled EDR Contact: 07/10/2023
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 01/28/2020	Telephone: 202-366-4595
Date Made Active in Reports: 04/17/2020	Last EDR Contact: 04/25/2023
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/07/2023
	Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 85

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/03/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/09/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/02/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 03/01/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 23

Source: DOL, Mine Safety & Health Admini
Telephone: 202-693-9424
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/22/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/24/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011	Source: USGS
Date Data Arrived at EDR: 06/08/2011	Telephone: 703-648-7709
Date Made Active in Reports: 09/13/2011	Last EDR Contact: 05/25/2023
Number of Days to Update: 97	Next Scheduled EDR Contact: 09/04/2023
	Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/17/2023	Source: Department of Interior
Date Data Arrived at EDR: 03/17/2023	Telephone: 202-208-2609
Date Made Active in Reports: 05/30/2023	Last EDR Contact: 05/31/2023
Number of Days to Update: 74	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/02/2023	Source: EPA
Date Data Arrived at EDR: 02/28/2023	Telephone: (415) 947-8000
Date Made Active in Reports: 03/24/2023	Last EDR Contact: 05/25/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/21/2021	Telephone: 202-564-0527
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 05/17/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 09/04/2023
	Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 11/09/2021	Source: Department of Defense
Date Data Arrived at EDR: 10/20/2022	Telephone: 703-704-1564
Date Made Active in Reports: 01/10/2023	Last EDR Contact: 04/27/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/24/2023
	Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/01/2023
Date Data Arrived at EDR: 01/04/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/31/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 64

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 07/08/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 123

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 04/20/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 05/02/2023
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/07/2023
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facility's name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 03/30/2023
Date Data Arrived at EDR: 03/30/2023
Date Made Active in Reports: 04/03/2023
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration's document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 03/30/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/30/2023	Telephone: 202-272-0167
Date Made Active in Reports: 04/03/2023	Last EDR Contact: 03/30/2023
Number of Days to Update: 4	Next Scheduled EDR Contact: 07/17/2023
	Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 04/27/2023	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/27/2023	Telephone: 202-272-0167
Date Made Active in Reports: 05/02/2023	Last EDR Contact: 04/27/2023
Number of Days to Update: 5	Next Scheduled EDR Contact: 07/17/2023
	Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 03/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 866-480-1028
Date Made Active in Reports: 05/05/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 59	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 03/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 916-341-5455
Date Made Active in Reports: 05/23/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 77	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/20/2023	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 03/21/2023	Telephone: 916-323-3400
Date Made Active in Reports: 06/06/2023	Last EDR Contact: 03/21/2023
Number of Days to Update: 77	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 12/07/2021	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 05/09/2022	Telephone: 925-454-2361
Date Made Active in Reports: 05/17/2022	Last EDR Contact: 05/08/2023
Number of Days to Update: 8	Next Scheduled EDR Contact: 08/21/2023
	Data Release Frequency: Varies

DRYCLEAN NO SONOMA CO DIST: Norther Sonoma County County Air Pollution Control District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Northern Sonoma County Air Pollution Control District.,

Date of Government Version: 04/17/2019	Source: Santa Barbara County Air Pollution Control District
Date Data Arrived at EDR: 04/17/2019	Telephone: 707-433-5911
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN PLACER CO DIST: Placer County Air Quality Management District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Placer County Air Quality Management District.

Date of Government Version: 01/16/2018	Source: Placer County Air Quality Management District
Date Data Arrived at EDR: 04/19/2019	Telephone: 530-745-2335
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 05/11/2023
Number of Days to Update: 1473	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN BAY AREA DIST: Bay Area Air Quality Management District Drycleaner Facility Listing

Bay Area Air Quality Management District Drycleaner Facility Listing.

Date of Government Version: 02/20/2019	Source: Bay Area Air Quality Management District
Date Data Arrived at EDR: 05/30/2019	Telephone: 415-516-1916
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/24/2023
Number of Days to Update: 1432	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN BUTTE CO DIST: Butte County Air Quality Management District Drycleaner Facility Listing

Butte County Air Quality Management District Drycleaner Facility Listing.

Date of Government Version: 12/31/2018	Source: Butte County Air Quality Management District
Date Data Arrived at EDR: 04/23/2019	Telephone: 530-332-9400
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/24/2023
Number of Days to Update: 1469	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN CALAVERAS CO DIST: Calaveras County Environmental Management Agency Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Calaveras County Environmental Management Agency.

Date of Government Version: 06/17/2019	Source: Calaveras County Environmental Management Agency
Date Data Arrived at EDR: 06/19/2019	Telephone: 209-754-6399
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/24/2023
Number of Days to Update: 1412	Next Scheduled EDR Contact: 09/16/2019
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN EAST KERN DIST: Eastern Kern Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Eastern Kern Air Pollution Control District.

Date of Government Version: 04/17/2019	Source: Eastern Kern Air Pollution Control District
Date Data Arrived at EDR: 04/17/2019	Telephone: 661-862-9684
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN GLENN CO DIST: Glenn County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Glenn County Air Pollution Control District.

Date of Government Version: 04/17/2019	Source: Glenn County Air Pollution Control District
Date Data Arrived at EDR: 04/17/2019	Telephone: 530-934-6500
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 05/03/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN GRANT: Grant Recipients List

Assembly Bill 998 (AB 998) established the Non-Toxic Dry Cleaning Incentive Program to provide financial assistance to the dry cleaning industry to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives.

Date of Government Version: 12/31/2020	Source: California Air Resources Board
Date Data Arrived at EDR: 02/04/2021	Telephone: 916-323-0006
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 05/11/2023
Number of Days to Update: 816	Next Scheduled EDR Contact: 08/07/2023
	Data Release Frequency: Varies

DRYCLEAN IMPERIAL CO DIST: Imperial County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Imperial County Air Pollution Control District

Date of Government Version: 05/14/2019	Source: Imperial County Air Pollution Control District
Date Data Arrived at EDR: 05/17/2019	Telephone: 442-265-1800
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1445	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN LAKE CO DIST: Lake County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Lake County Air Quality Management District,

Date of Government Version: 04/29/2019	Source: Lake County Air Quality Management District
Date Data Arrived at EDR: 05/07/2019	Telephone: 707-263-7000
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 05/11/2023
Number of Days to Update: 1455	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN MENDO CO DIST: Mendocino County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mendocino County Air Quality Management District.

Date of Government Version: 02/08/2019	Source: Mendocino County Air Quality Management District
Date Data Arrived at EDR: 05/21/2019	Telephone: 707-463-4354
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1441	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN MOJAVE DESERT DIST: Mojave Desert Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mojave Desert Air Quality Management District.

Date of Government Version: 04/17/2019	Source: Mojave Desert Air Quality Management District
Date Data Arrived at EDR: 04/17/2019	Telephone: 760-245-1661
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN MONTEREY BAY DIST: Monterey Bay Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Monterey Bay Air Quality Management District.

Date of Government Version: 04/17/2019	Source: Monterey Bay Air Quality Management District
Date Data Arrived at EDR: 04/17/2019	Telephone: 831-647-9411
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN NO COAST UNIFIED DIST: North Coast Unified Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the North Coast Unified Air Quality Management District.

Date of Government Version: 11/30/2016	Source: North Coast Unified Air Quality Management District
Date Data Arrived at EDR: 04/19/2019	Telephone: 707-443-3093
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1473	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN NO SIERRA DIST: Northern Sierra Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sierra Air Quality Management District,

Date of Government Version: 05/07/2019	Source: Northern Sierra Air Quality Management District
Date Data Arrived at EDR: 05/07/2019	Telephone: 530-274-9350
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1455	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN SAN DIEGO CO DIST: San Diego County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Diego County Air Pollution Control District.

Date of Government Version: 02/01/2019	Source: San Diego County Air Pollution Control District
Date Data Arrived at EDR: 05/01/2019	Telephone: 858-586-2616
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1461	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN SACRAMENTO METO DIST: Sacramento Metropolitan Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Sacramento Metropolitan Air Quality Management District.

Date of Government Version: 04/24/2019	Source: Sacramento Metropolitan Air Quality Management District
Date Data Arrived at EDR: 04/25/2019	Telephone: 916-874-3958
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1467	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN SANTA BARB CO DIST: Santa Barbara County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Santa Barbara County Air Pollution Control District.

Date of Government Version: 02/19/2019	Source: Santa Barbara County Air Pollution Control District
Date Data Arrived at EDR: 04/17/2019	Telephone: 805-961-8867
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1475	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN SAN JOAQ VAL DIST: San Joaquin Valley Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Joaquin Valley Air Pollution Control District.

Date of Government Version: 05/01/2019	Source: San Joaquin Valley Air Pollution Control District
Date Data Arrived at EDR: 05/03/2019	Telephone: 559-230-6001
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 05/11/2023
Number of Days to Update: 1459	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN SAN LUIS OB CO DIST: San Luis Obispo County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Luis Obispo County Air Pollution Control District.

Date of Government Version: 04/23/2019	Source: San Luis Obispo County Air Pollution Control District
Date Data Arrived at EDR: 04/25/2019	Telephone: 805-781-5756
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1467	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN SHASTA CO DIST: Shasta County Air Quality Management District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Shasta County Air Quality Management District.

Date of Government Version: 04/17/2019	Source: Shasta County Air Quality Management District
Date Data Arrived at EDR: 04/19/2019	Telephone: 530-225-5674
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1473	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN TEHAMA CO DIST: Tehama County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Tehama County Air Pollution Control District.

Date of Government Version: 04/24/2019	Source: Tehama County Air Pollution Control District
Date Data Arrived at EDR: 04/24/2019	Telephone: 530-527-3717
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1468	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN YOLO-SOLANO DIST: Yolo-Solano Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Yolo-Solano Air Quality Management District.

Date of Government Version: 05/31/2019	Source: Yolo-Solano Air Quality Management District
Date Data Arrived at EDR: 06/06/2019	Telephone: 530-757-3650
Date Made Active in Reports: 05/01/2023	Last EDR Contact: 04/25/2023
Number of Days to Update: 1425	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

DRYCLEAN FEATHER RIVER DIST: Feather River Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Feather River Air Quality Management District.

Date of Government Version: 03/08/2023	Source: Feather River Air Quality Management District
Date Data Arrived at EDR: 03/09/2023	Telephone: 530-634-7659
Date Made Active in Reports: 06/05/2023	Last EDR Contact: 06/08/2023
Number of Days to Update: 88	Next Scheduled EDR Contact: 09/16/2019
	Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/27/2021	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 09/01/2021	Telephone: 916-327-4498
Date Made Active in Reports: 11/19/2021	Last EDR Contact: 06/06/2023
Number of Days to Update: 79	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Annually

DRYCLEAN VENTURA CO DIST: Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Ventura County Air Pollution Control District.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/16/2019
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1475

Source: Ventura County Air Pollution Control District
Telephone: 805-645-1421
Last EDR Contact: 04/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 02/17/2023
Date Data Arrived at EDR: 02/17/2023
Date Made Active in Reports: 05/09/2023
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/23/2023
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/15/2023
Number of Days to Update: 80

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/30/2022
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 06/26/2023
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/10/2023
Date Data Arrived at EDR: 01/18/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/11/2023
Date Data Arrived at EDR: 01/17/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/06/2023
Date Data Arrived at EDR: 02/15/2023
Date Made Active in Reports: 05/09/2023
Number of Days to Update: 83

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/08/2023
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 877-786-9427
Last EDR Contact: 05/16/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/08/2023
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/16/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/03/2023
Date Data Arrived at EDR: 01/04/2023
Date Made Active in Reports: 03/21/2023
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/04/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 07/05/2022
Date Made Active in Reports: 09/19/2022
Number of Days to Update: 76

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/23/2023
Number of Days to Update: 77

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 01/09/2023	Source: Department of Public Health
Date Data Arrived at EDR: 02/28/2023	Telephone: 916-558-1784
Date Made Active in Reports: 05/17/2023	Last EDR Contact: 05/25/2023
Number of Days to Update: 78	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 02/07/2023	Telephone: 916-445-9379
Date Made Active in Reports: 04/28/2023	Last EDR Contact: 05/08/2023
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/21/2023
	Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 02/27/2023	Source: Department of Pesticide Regulation
Date Data Arrived at EDR: 02/28/2023	Telephone: 916-445-4038
Date Made Active in Reports: 05/22/2023	Last EDR Contact: 05/25/2023
Number of Days to Update: 83	Next Scheduled EDR Contact: 09/11/2023
	Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/06/2023	Source: Department of Conservation
Date Data Arrived at EDR: 03/07/2023	Telephone: 916-323-3836
Date Made Active in Reports: 03/31/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/09/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/10/2023	Telephone: 916-445-3846
Date Made Active in Reports: 05/24/2023	Last EDR Contact: 06/06/2023
Number of Days to Update: 75	Next Scheduled EDR Contact: 09/25/2023
	Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020	Source: City of San Jose Fire Department
Date Data Arrived at EDR: 11/05/2020	Telephone: 408-535-7694
Date Made Active in Reports: 01/26/2021	Last EDR Contact: 04/26/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 08/14/2023
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/06/2023	Source: Department of Conservation
Date Data Arrived at EDR: 03/07/2023	Telephone: 916-445-2408
Date Made Active in Reports: 03/31/2023	Last EDR Contact: 06/02/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 03/06/2023	Source: State Water Resource Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 866-480-1028
Date Made Active in Reports: 03/31/2023	Last EDR Contact: 06/05/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021	Source: RWQCB, Central Valley Region
Date Data Arrived at EDR: 07/01/2021	Telephone: 559-445-5577
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 04/06/2023
Number of Days to Update: 90	Next Scheduled EDR Contact: 07/17/2023
	Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007	Source: State Water Resources Control Board
Date Data Arrived at EDR: 06/20/2007	Telephone: 916-341-5227
Date Made Active in Reports: 06/29/2007	Last EDR Contact: 05/10/2023
Number of Days to Update: 9	Next Scheduled EDR Contact: 08/28/2023
	Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 03/16/2023
Number of Days to Update: 13	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 03/06/2023	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/07/2023	Telephone: 866-480-1028
Date Made Active in Reports: 03/31/2023	Last EDR Contact: 06/05/2023
Number of Days to Update: 24	Next Scheduled EDR Contact: 09/18/2023
	Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/24/2023
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 01/05/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 4

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/18/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 03/06/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/31/2023
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/05/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/05/2022
Date Data Arrived at EDR: 04/05/2022
Date Made Active in Reports: 04/26/2022
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/07/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: No Update Planned

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 12/28/2022
Date Data Arrived at EDR: 12/28/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 79

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA AMADOR: CUPA Facility List Cupa Facility List

Date of Government Version: 01/31/2023
Date Data Arrived at EDR: 02/02/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 76

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing Cupa Facility Listing

Date of Government Version: 03/17/2023
Date Data Arrived at EDR: 03/21/2023
Date Made Active in Reports: 06/06/2023
Number of Days to Update: 77

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 12/28/2022
Date Data Arrived at EDR: 01/24/2023
Date Made Active in Reports: 04/10/2023
Number of Days to Update: 76

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA DEL NORTE: CUPA Facility List Cupa Facility list

Date of Government Version: 02/13/2023
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 05/08/2023
Number of Days to Update: 83

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List CUPA facility list.

Date of Government Version: 08/08/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 09/01/2022
Number of Days to Update: 23

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 04/19/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA IMPERIAL: CUPA Facility List Cupa facility list.

Date of Government Version: 01/13/2023
Date Data Arrived at EDR: 01/17/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 77

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 77

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List

A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 01/30/2023
Date Data Arrived at EDR: 02/01/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 77

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 01/30/2023
Date Data Arrived at EDR: 02/01/2023
Date Made Active in Reports: 04/21/2023
Number of Days to Update: 79

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

LAKE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA LAKE: CUPA Facility List Cupa facility list

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 05/31/2023
Number of Days to Update: 34

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/09/2023
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/29/2023
Number of Days to Update: 76

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 03/29/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/09/2023
Date Data Arrived at EDR: 01/10/2023
Date Made Active in Reports: 03/23/2023
Number of Days to Update: 72

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/11/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/29/2023
Number of Days to Update: 76

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES AST: Active & Inactive AST Inventory

A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 06/25/2019	Telephone: 213-978-3800
Date Made Active in Reports: 08/22/2019	Last EDR Contact: 03/16/2023
Number of Days to Update: 58	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 01/10/2022	Source: Los Angeles County Department of Public Works
Date Data Arrived at EDR: 01/12/2022	Telephone: 626-458-6973
Date Made Active in Reports: 04/04/2022	Last EDR Contact: 04/05/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/24/2023
	Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 11/01/2022	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 12/14/2022	Telephone: 213-978-3800
Date Made Active in Reports: 03/07/2023	Last EDR Contact: 03/24/2023
Number of Days to Update: 83	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 11/01/2022	Source: Los Angeles Fire Department
Date Data Arrived at EDR: 12/14/2022	Telephone: 213-978-3800
Date Made Active in Reports: 03/07/2023	Last EDR Contact: 03/24/2023
Number of Days to Update: 83	Next Scheduled EDR Contact: 07/03/2023
	Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021	Source: Community Health Services
Date Data Arrived at EDR: 07/09/2021	Telephone: 323-890-7806
Date Made Active in Reports: 09/29/2021	Last EDR Contact: 04/18/2023
Number of Days to Update: 82	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 04/19/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 04/05/2023
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/24/2023
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 04/23/2019	Telephone: 562-570-2563
Date Made Active in Reports: 06/27/2019	Last EDR Contact: 04/12/2023
Number of Days to Update: 65	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/18/2022	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 10/19/2022	Telephone: 310-618-2973
Date Made Active in Reports: 01/10/2023	Last EDR Contact: 04/12/2023
Number of Days to Update: 83	Next Scheduled EDR Contact: 07/31/2023
	Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020	Source: Madera County Environmental Health
Date Data Arrived at EDR: 08/12/2020	Telephone: 559-675-7823
Date Made Active in Reports: 10/23/2020	Last EDR Contact: 05/10/2023
Number of Days to Update: 72	Next Scheduled EDR Contact: 08/28/2023
	Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018	Source: Public Works Department Waste Management
Date Data Arrived at EDR: 10/04/2018	Telephone: 415-473-6647
Date Made Active in Reports: 11/02/2018	Last EDR Contact: 03/22/2023
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/10/2023
	Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021	Source: Department of Public Health
Date Data Arrived at EDR: 11/18/2021	Telephone: 707-463-4466
Date Made Active in Reports: 11/22/2021	Last EDR Contact: 05/17/2023
Number of Days to Update: 4	Next Scheduled EDR Contact: 09/04/2023
	Data Release Frequency: Annually

MERCED COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA MERCED: CUPA Facility List CUPA facility list.

Date of Government Version: 02/15/2022
Date Data Arrived at EDR: 02/17/2022
Date Made Active in Reports: 05/11/2022
Number of Days to Update: 83

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 03/22/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List CUPA facility list.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/23/2023
Date Data Arrived at EDR: 01/25/2023
Date Made Active in Reports: 04/10/2023
Number of Days to Update: 75

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/09/2023
Number of Days to Update: 89

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/02/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/04/2023
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/06/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/03/2023
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 08/26/2022
Date Data Arrived at EDR: 08/29/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 78

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/08/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

RIVERSIDE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/18/2023
Date Data Arrived at EDR: 01/19/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 01/18/2023
Date Data Arrived at EDR: 01/19/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/16/2023
Number of Days to Update: 85

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/09/2022
Date Made Active in Reports: 03/01/2023
Number of Days to Update: 82

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 02/08/2023
Date Data Arrived at EDR: 02/09/2023
Date Made Active in Reports: 05/04/2023
Number of Days to Update: 84

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/15/2023
Date Data Arrived at EDR: 02/15/2023
Date Made Active in Reports: 05/09/2023
Number of Days to Update: 83

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 02/28/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 78

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 05/25/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/27/2021
Date Data Arrived at EDR: 03/04/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 88

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/04/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing Cupa facilities

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/03/2023
Date Data Arrived at EDR: 02/07/2023
Date Made Active in Reports: 04/26/2023
Number of Days to Update: 78

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 04/28/2023
Date Data Arrived at EDR: 04/28/2023
Date Made Active in Reports: 05/03/2023
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 04/26/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Quarterly

SAN FRANCISCO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing

a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 10/11/2022
Date Data Arrived at EDR: 10/14/2022
Date Made Active in Reports: 01/04/2023
Number of Days to Update: 82

Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 04/13/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/06/2023
Next Scheduled EDR Contact: 09/25/2023
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List

Cupa Facility List.

Date of Government Version: 02/09/2023
Date Data Arrived at EDR: 02/10/2023
Date Made Active in Reports: 05/05/2023
Number of Days to Update: 84

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

SAN MATEO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BI SAN MATEO: Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/08/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 05/31/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List

Cupa facility list

Date of Government Version: 02/10/2023
Date Data Arrived at EDR: 02/10/2023
Date Made Active in Reports: 05/05/2023
Number of Days to Update: 84

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 05/17/2023
Next Scheduled EDR Contact: 09/04/2023
Data Release Frequency: No Update Planned

SANTA CRUZ COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA SANTA CRUZ: CUPA Facility List CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/28/2021
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/16/2023
Next Scheduled EDR Contact: 07/03/2023
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA STANISLAUS: CUPA Facility List Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Environmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/05/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks Underground storage tank sites located in Sutter county.

Date of Government Version: 08/03/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 81

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/23/2023
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List Cupa facilities

Date of Government Version: 11/17/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 81

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List Cupa facility list

Date of Government Version: 01/13/2023
Date Data Arrived at EDR: 01/17/2023
Date Made Active in Reports: 04/04/2023
Number of Days to Update: 77

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List Cupa program facilities

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 05/10/2023
Next Scheduled EDR Contact: 08/14/2023
Data Release Frequency: Varies

TUOLUMNE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA TUOLUMNE: CUPA Facility List Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Division of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/12/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/27/2022
Date Data Arrived at EDR: 01/26/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 83

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/17/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/22/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/27/2022
Date Data Arrived at EDR: 01/26/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 83

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/17/2023
Next Scheduled EDR Contact: 07/31/2023
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2023
Date Data Arrived at EDR: 03/07/2023
Date Made Active in Reports: 05/24/2023
Number of Days to Update: 78

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/02/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Quarterly

YOLO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/19/2022
Date Data Arrived at EDR: 12/27/2022
Date Made Active in Reports: 03/17/2023
Number of Days to Update: 80

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/22/2023
Next Scheduled EDR Contact: 07/10/2023
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 01/26/2023
Date Data Arrived at EDR: 01/27/2023
Date Made Active in Reports: 04/19/2023
Number of Days to Update: 82

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 05/03/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/16/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/06/2023
Number of Days to Update: 82

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/11/2023
Next Scheduled EDR Contact: 08/21/2023
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 03/30/2023
Next Scheduled EDR Contact: 07/17/2023
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/27/2023
Next Scheduled EDR Contact: 08/07/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/06/2023
Next Scheduled EDR Contact: 07/24/2023
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/10/2022
Next Scheduled EDR Contact: 08/28/2023
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2023
Next Scheduled EDR Contact: 09/18/2023
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: Endeavor Business Media

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities

Source: Department of Social Services

Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish and Wildlife

Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

23-5794
9350 SHELDON ROAD
ELK GROVE, CA 95624

TARGET PROPERTY COORDINATES

Latitude (North):	38.435003 - 38° 26' 6.01"
Longitude (West):	121.349268 - 121° 20' 57.36"
Universal Transverse Mercator:	Zone 10
UTM X (Meters):	644077.8
UTM Y (Meters):	4255165.0
Elevation:	53 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12021595 ELK GROVE, CA
Version Date:	2018

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

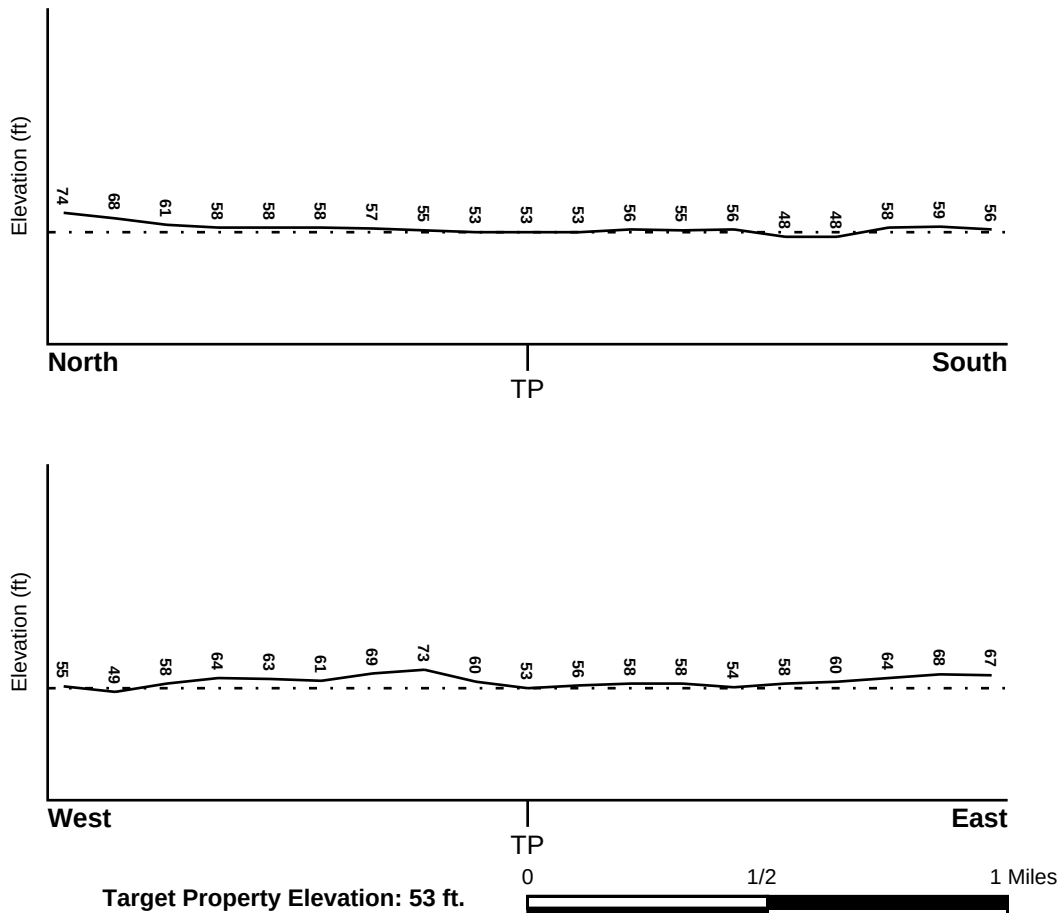
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
06067C0336H	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
06067C0328H	FEMA FIRM Flood data
06067C0329H	FEMA FIRM Flood data
06067C0337H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
ELK GROVE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

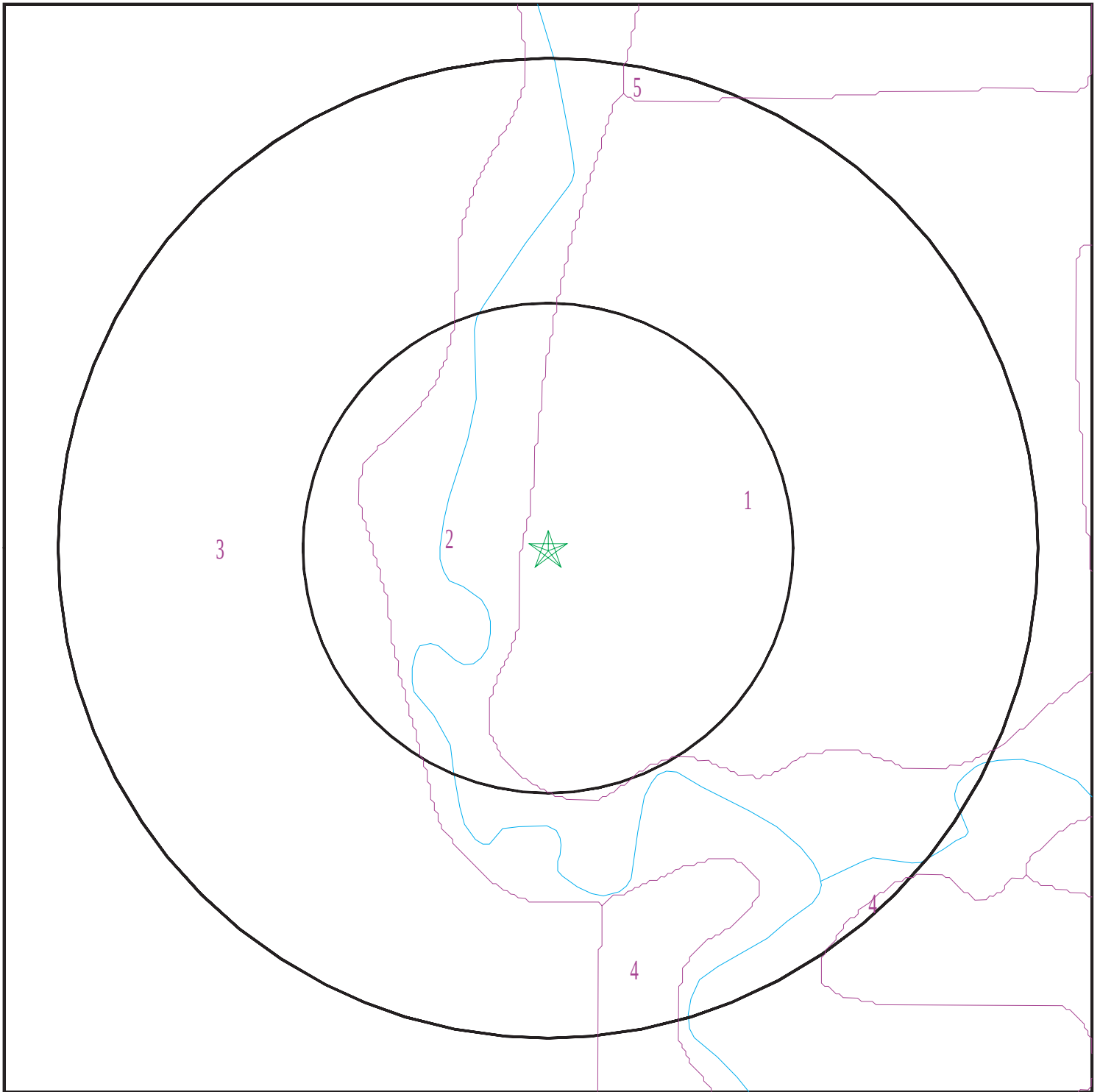
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q (decoded above as Era, System & Series)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7359676.2s



- ★ Target Property
- SSURGO Soil
- Water

0 1/16 1/8 1/4 Miles



SITE NAME: 23-5794
ADDRESS: 9350 Sheldon Road
Elk Grove CA 95624
LAT/LONG: 38.435003 / 121.349268

CLIENT: Pinnacle Environmental Inc.
CONTACT: Travis Stansbery
INQUIRY #: 7359676.2s
DATE: June 09, 2023 8:52 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: SAN JOAQUIN

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	22 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	22 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
3	27 inches	53 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
4	53 inches	59 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

Soil Map ID: 2

Soil Component Name: HICKSVILLE

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 7.8 Min: 6.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	12 inches	42 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 7.8 Min: 6.1
3	42 inches	64 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 7.8 Min: 6.1

Soil Map ID: 3

Soil Component Name: REDDING

Soil Surface Texture: gravelly loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	7 inches	20 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:
3	20 inches	27 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:
4	27 inches	66 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.01 Min: 0	Max: Min:

Soil Map ID: 4

Soil Component Name: SAN JOAQUIN

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	22 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	22 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
3	27 inches	53 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
4	53 inches	59 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

Soil Map ID: 5

Soil Component Name: SAN JOAQUIN

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	22 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
2	22 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
3	27 inches	53 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
4	53 inches	59 inches	stratified sandy loam to loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A2	USGS40000188320	1/4 - 1/2 Mile ENE
3	USGS40000188311	1/4 - 1/2 Mile West
5	USGS40000188272	1/2 - 1 Mile South
7	USGS40000188284	1/2 - 1 Mile ESE
8	USGS40000188323	1/2 - 1 Mile East
10	USGS40000188358	1/2 - 1 Mile NW
C14	USGS40000188348	1/2 - 1 Mile NE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

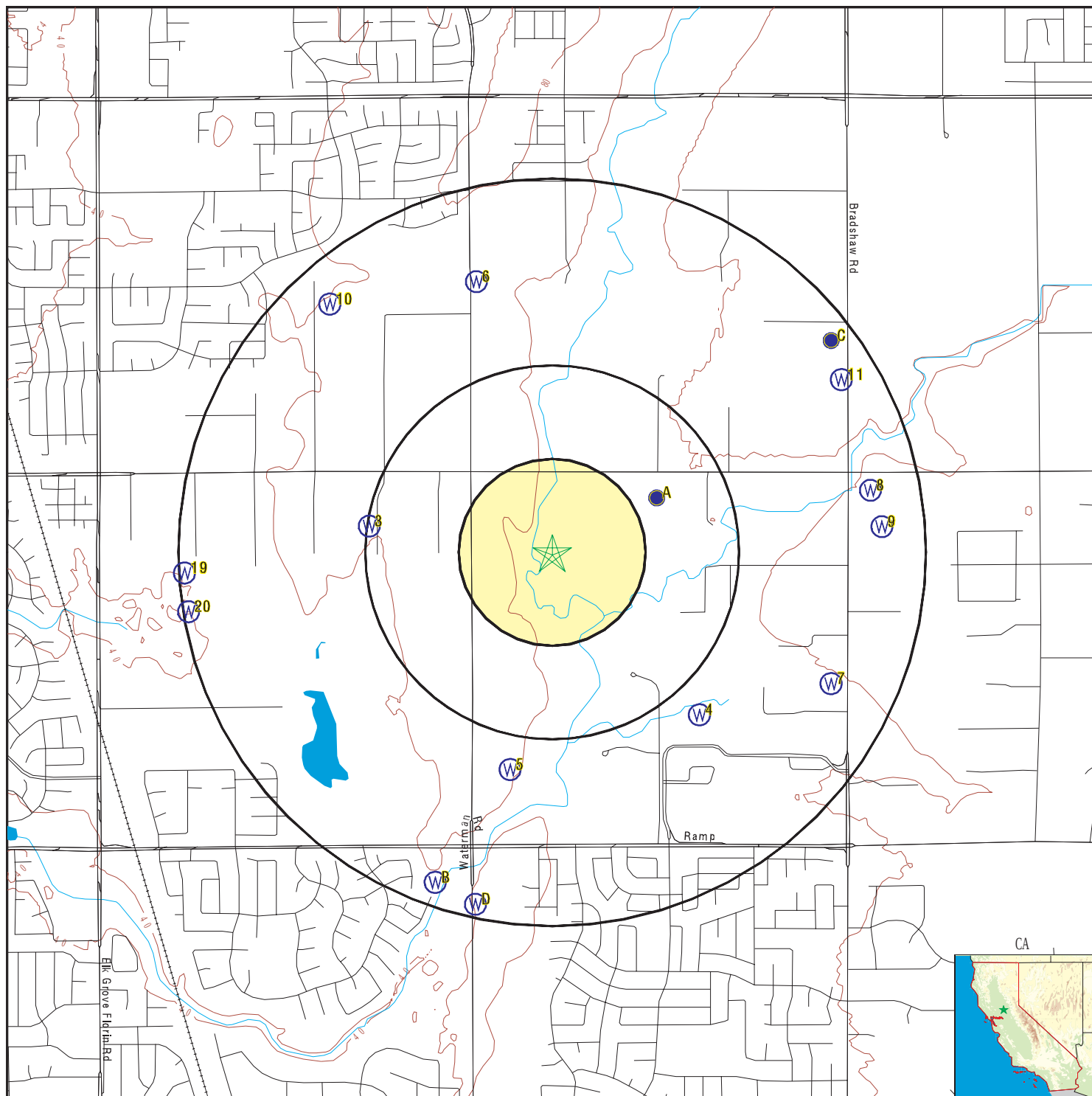
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A1	CAUSGSN00015533	1/4 - 1/2 Mile ENE
4	CADWR0000000808	1/2 - 1 Mile SE
6	CADWR9000039271	1/2 - 1 Mile NNW
9	CADWR0000014042	1/2 - 1 Mile East
11	CADWR9000039256	1/2 - 1 Mile ENE
B12	CAEDF0000087506	1/2 - 1 Mile SSW
C13	CAUSGSN00010032	1/2 - 1 Mile NE
B15	CAEDF0000012181	1/2 - 1 Mile SSW
B16	CAEDF0000060685	1/2 - 1 Mile SSW
D17	CAEDF0000043461	1/2 - 1 Mile SSW
D18	CAEDF0000005166	1/2 - 1 Mile SSW
19	CAEDF0000050355	1/2 - 1 Mile West
20	CAEDF0000014625	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 7359676.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: 23-5794
 ADDRESS: 9350 Sheldon Road
 Elk Grove CA 95624
 LAT/LONG: 38.435003 / 121.349268

CLIENT: Pinnacle Environmental Inc.
 CONTACT: Travis Stansbery
 INQUIRY #: 7359676.2s
 DATE: June 09, 2023 8:52 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

A1
ENE
1/4 - 1/2 Mile
Higher

CA WELLS CAUSGSN00015533

Well ID:	USGS-382614121203501	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-382614121203501	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-382614121203501&store_num=		
GeoTracker Data:	Not Reported		

A2
ENE
1/4 - 1/2 Mile
Higher

FED USGS USGS40000188320

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E29C001M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Merten Formation (Pliocene-Miocene)		
Aquifer Type:	Not Reported	Construction Date:	19810409
Well Depth:	670	Well Depth Units:	ft
Well Hole Depth:	709	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	1981-04-09
Feet below surface:	106.00	Feet to sea level:	Not Reported
Note:	Not Reported		

3
West
1/4 - 1/2 Mile
Higher

FED USGS USGS40000188311

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E30B001M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19780515	Well Depth:	160
Well Depth Units:	ft	Well Hole Depth:	220
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1978-05-15
Feet below surface:	95.00	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

4
SE
1/2 - 1 Mile
Higher

CA WELLS CADWR0000000808

Well ID:	07N06E29C001M	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	07N06E29C001M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=07N06E29C001M&store_num=		
GeoTracker Data:	Not Reported		

5
South
1/2 - 1 Mile
Higher

FED USGS USGS40000188272

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E29N001M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19780427	Well Depth:	230
Well Depth Units:	ft	Well Hole Depth:	235
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1982-07-19
Feet below surface:	119.67	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1978-04-27	Feet below surface:	95.00
Feet to sea level:	Not Reported	Note:	Not Reported

6
NNW
1/2 - 1 Mile
Higher

CA WELLS CADWR9000039271

State Well #:	Not Reported	Station ID:	55015
Well Name:	W-069	Basin Name:	South American
Well Use:	Other	Well Type:	Single Well
Well Depth:	880	Well Completion Rpt #:	706550

7
ESE
1/2 - 1 Mile
Higher

FED USGS USGS40000188284

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E29J001M	Type:	Well

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720101	Well Depth:	140
Well Depth Units:	ft	Well Hole Depth:	180
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1982-07-20
Feet below surface:	106.29	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1972-01-01	Feet below surface:	84.00
Feet to sea level:	Not Reported	Note:	Not Reported

8 East 1/2 - 1 Mile Higher

FED USGS USGS40000188323

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E28D002M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19720101	Well Depth:	140
Well Depth Units:	ft	Well Hole Depth:	180
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1972-01-01
Feet below surface:	90.00	Feet to sea level:	Not Reported
Note:	Not Reported		

9 East 1/2 - 1 Mile Higher

CA WELLS CADWR0000014042

Well ID:	07N06E20J003M	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	07N06E20J003M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=07N06E20J003M&store_num=		
GeoTracker Data:	Not Reported		

10 NW 1/2 - 1 Mile Higher

FED USGS USGS40000188358

Organization ID:	USGS-CA
Organization Name:	USGS California Water Science Center

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Monitor Location:	007N006E19K001M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system	Aquifer Type:	Not Reported
Formation Type:	Not Reported	Well Depth:	Not Reported
Construction Date:	19720101	Well Hole Depth:	Not Reported
Well Depth Units:	Not Reported		
Well Hole Depth Units:	Not Reported		

Ground water levels, Number of Measurements:	2	Level reading date:	1982-07-21
Feet below surface:	126.6	Feet to sea level:	Not Reported
Note:	The site was being pumped.		
Level reading date:	1972-01-01	Feet below surface:	104.00
Feet to sea level:	Not Reported	Note:	Not Reported

11 ENE 1/2 - 1 Mile Higher

CA WELLS CADWR9000039256

State Well #:	07N06E20J001M	Station ID:	27851
Well Name:	SCGA #8	Basin Name:	South American
Well Use:	Irrigation	Well Type:	Single Well
Well Depth:	0	Well Completion Rpt #:	Not Reported

B12 SSW 1/2 - 1 Mile Higher

CA WELLS CAEDF0000087506

Well ID:	L10008601447-MW-11	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10008601447&assigned_name=MW-11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10008601447&assigned_name=MW-11		

C13 NE 1/2 - 1 Mile Higher

CA WELLS CAUSGSN00010032

Well ID:	USGS-382636121200401	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-382636121200401	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-382636121200401&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C14
NE
1/2 - 1 Mile
Higher

FED USGS USGS40000188348

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	007N006E20J003M	Type:	Well
Description:	Not Reported	HUC:	18020109
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Central Valley aquifer system		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19620717	Well Depth:	258
Well Depth Units:	ft	Well Hole Depth:	258
Well Hole Depth Units:	ft		

B15
SSW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000012181

Well ID:	L10008601447-MW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10008601447&assigned_name=MW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10008601447&assigned_name=MW-10		

B16
SSW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000060685

Well ID:	L10008601447-EW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	EW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10008601447&assigned_name=EW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10008601447&assigned_name=EW-6		

D17
SSW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000043461

Well ID:	L10008601447-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10008601447&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10008601447&assigned_name=MW-1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

D18
SSW
1/2 - 1 Mile
Higher

CA WELLS CAEDF0000005166

Well ID:	L10008601447-MW-5	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10008601447&assigned_name=MW-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10008601447&assigned_name=MW-5		

19
West
1/2 - 1 Mile
Lower

CA WELLS CAEDF00000050355

Well ID:	L10002628544-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10002628544&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10002628544&assigned_name=MW-1		

20
West
1/2 - 1 Mile
Lower

CA WELLS CAEDF00000014625

Well ID:	L10002628544-MW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=L10002628544&assigned_name=MW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=L10002628544&assigned_name=MW-7		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95624	18	1

Federal EPA Radon Zone for SACRAMENTO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 95624

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	3.000 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Department of Fish and Wildlife

Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program

State Water Resources Control Board

Telephone: 916-341-5577

The GAMA Program is California's comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Health Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

California Drinking Water Quality Database

Source: Department of Public Health

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations

Source: Dept of Conservation, Geologic Energy Management Division

Telephone: 916-323-1779

Oil and Gas well locations in the state.

California Earthquake Fault Lines

Source: California Division of Mines and Geology

The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United States Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon

Source: Department of Public Health

Telephone: 916-210-8558

Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRRA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Appendix K



Environmental Noise Assessment

Summer Villas EIR

City of Elk Grove, California

July 25, 2025

Project #230512

Prepared for:



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Table of Contents

INTRODUCTION	1
ENVIRONMENTAL SETTING	1
<i>BACKGROUND INFORMATION ON NOISE</i>	<i>1</i>
EXISTING NOISE AND VIBRATION ENVIRONMENTS.....	6
<i>EXISTING NOISE RECEPTORS</i>	<i>6</i>
<i>EXISTING GENERAL AMBIENT NOISE LEVELS</i>	<i>6</i>
FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS	9
<i>OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY.....</i>	<i>9</i>
EVALUATION OF PROJECT-GENERATED NOISE SOURCES ON EXISTING SENSITIVE RECEPTORS	10
EVALUATION OF FUTURE TRANSPORTATION NOISE ON PROJECT SITE.....	13
CONSTRUCTION NOISE ENVIRONMENT	15
CONSTRUCTION VIBRATION ENVIRONMENT	18
REGULATORY CONTEXT	18
<i>FEDERAL</i>	<i>18</i>
<i>STATE.....</i>	<i>18</i>
<i>LOCAL.....</i>	<i>18</i>
<i>CRITERIA FOR ACCEPTABLE VIBRATION</i>	<i>20</i>
IMPACTS AND MITIGATION MEASURES.....	23
<i>THRESHOLDS OF SIGNIFICANCE</i>	<i>23</i>
<i>PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES</i>	<i>24</i>
REFERENCES	34

List of Figures

Figure 1: Site Plan.....	2
Figure 2: Noise Measurement Sites and Receptor Locations	3
Figure 3: Existing Daytime Ambient Noise Levels (dBA L_{eq}).....	8
Figure 4: Project-Generated Noise Levels (dBA L_{eq}).....	12
Figure 5: Future Transportation Noise Levels on Project Site (dBA L_{dn})	14
Figure 6: Construction Noise Levels (dBA L_{eq}).....	17
Figure 7: Future Transportation Noise Levels with Sound Walls (dBA L_{dn}).....	28
Figure 8: Pickleball Noise Levels with Barriers (dBA L_{eq}).....	30

List of Tables

Table 1: Typical Noise Levels.....	4
Table 2: Summary of Existing Background Noise Measurement Data	6
Table 3: Predicted Traffic Noise Level and Project-Related Traffic Noise Level Increases	9
Table 4: EPAP Traffic Noise Level and Project-Related Traffic Noise Level Increases	10
Table 5: Cumulative Traffic Noise Level and Project-Related Traffic Noise Level Increases	10
Table 6: Construction Equipment Noise Levels for Primary Construction Phases	15
Table 7: Vibration Levels for Various Construction Equipment.....	18
Table 8: Maximum Allowable Noise Exposure, Transportation Noise Sources.....	19
Table 9: Noise Level Performance Standards For Non-Transportation Noise Sources*	20
Table 10: Effects of Vibration on People and Buildings	22
Table 11: Construction Noise Level Increases.....	26
Table 12: Off-Site Construction Noise Level Increases	27
Table 13: Off-Site Construction Noise Level Increases	32

Appendices

- Appendix A: Acoustical Terminology
- Appendix B: Field Noise Measurement Data
- Appendix C: Traffic Noise Calculations

INTRODUCTION

The proposed Project is located at the southeast corner of Sheldon Road and Waterman Road in the City of Elk Grove, California. The Project would require approval of a General Plan/Rural Area Community Plan Amendment and a Rezone to allow for the creation of the 116-acre Summer Villas SPA. The Summer Villas SPA contains three distinct sub-zones: 1) Active Adult Neighborhood (71.3 acres), 2) Laguna Creek Open Space (20.3 acres), and 3) Waterman Recreational Open Space (19.4 acres). The Project will consist of single-family active adult residential uses, a clubhouse, and several outdoor activity areas.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site and noise measurement locations.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

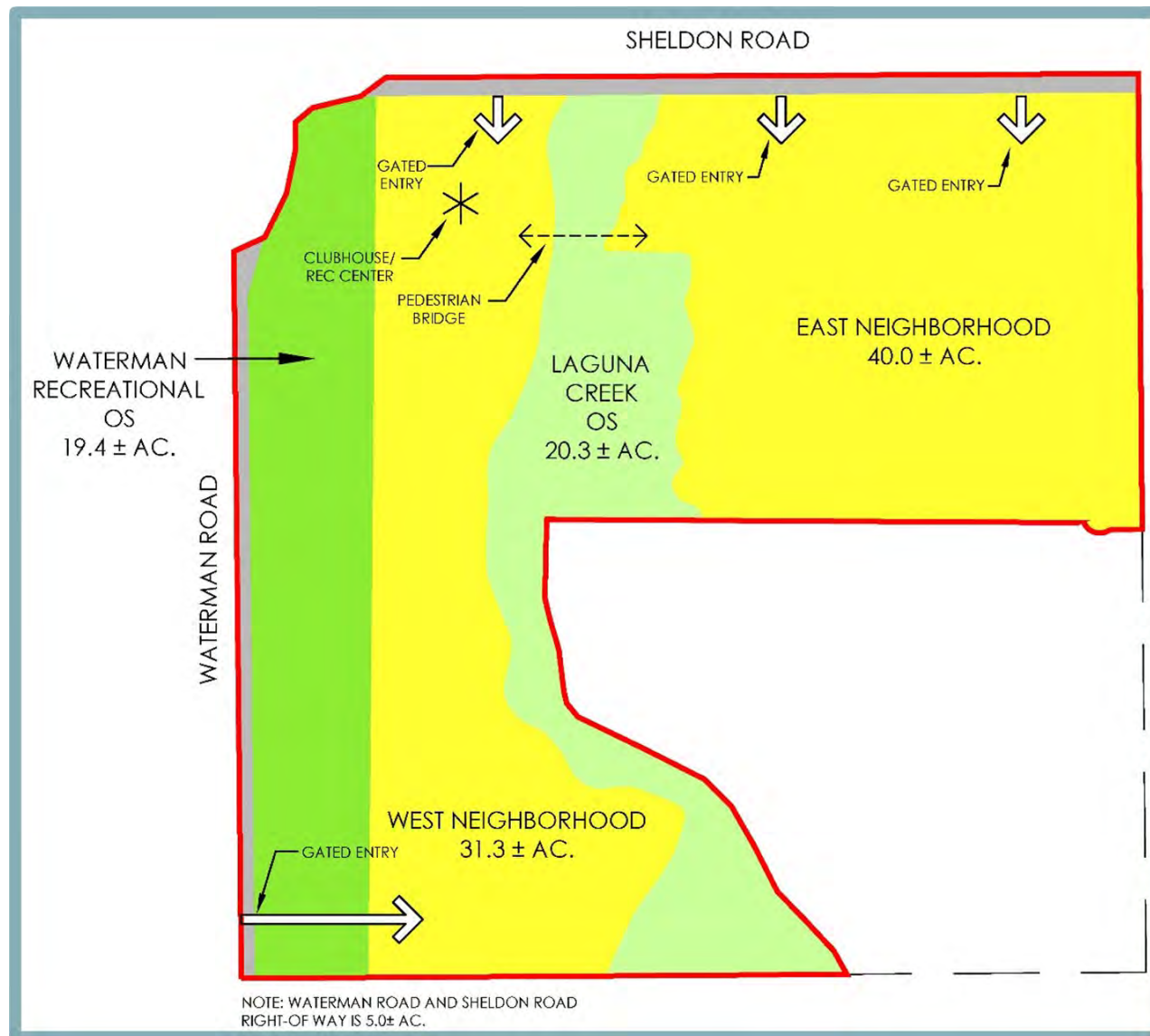
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

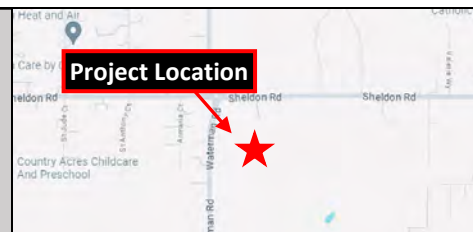
Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.



Summer Villas EIR
City of Elk Grove, California

Figure 1
Project Site Plan

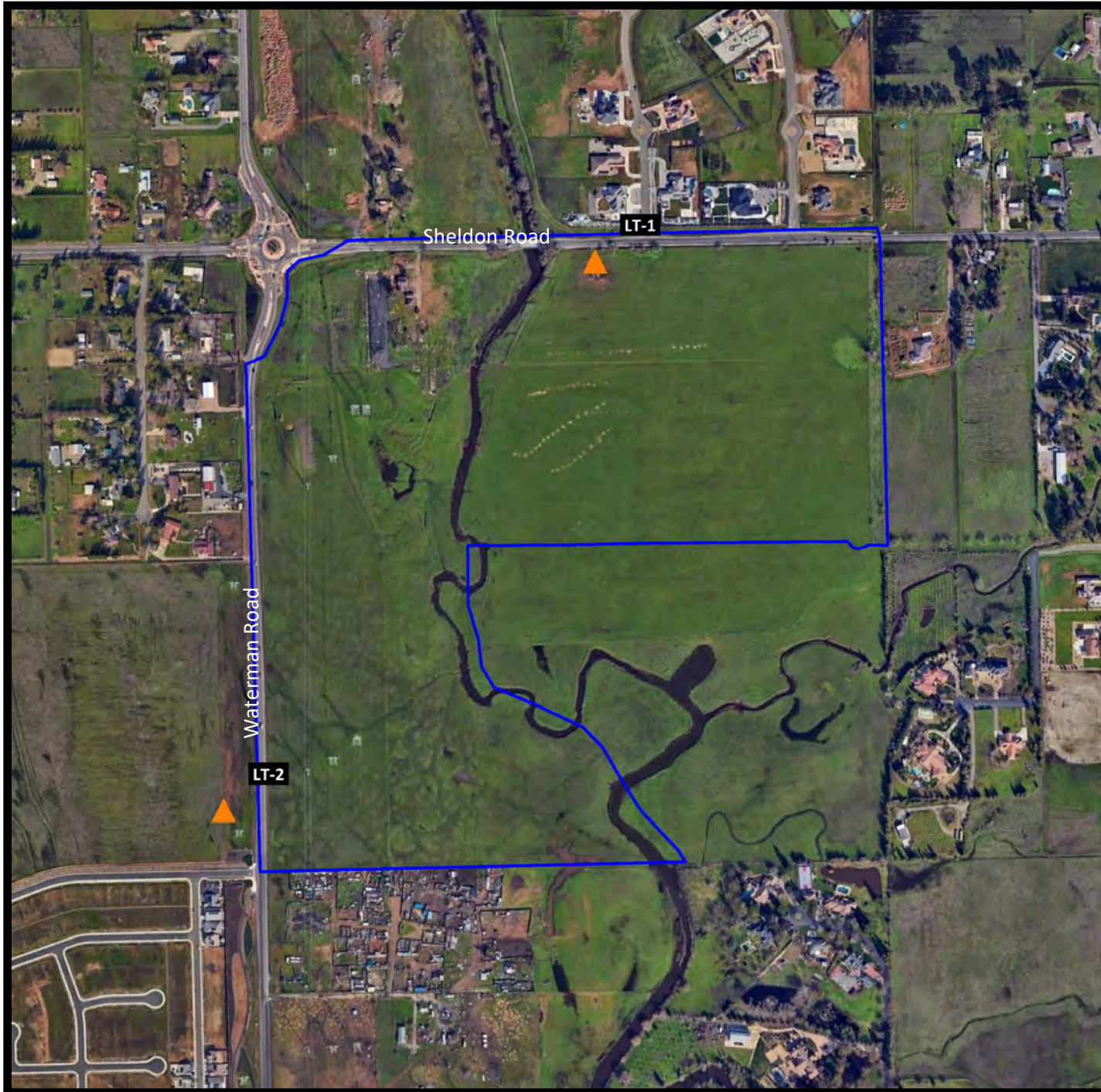


Summer Villas EIR

City of Elk Grove, California

Figure 2

Noise Measurement Sites



Legend

-  Project Site
-  Noise Measurement Site - Long Term



Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 02/18/2025

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses surrounding the project.

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by traffic on Waterman Road and Sheldon Road. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at two locations on the project site. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max} , represents the highest noise level measured. The average value, denoted L_{eq} , represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50} , represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

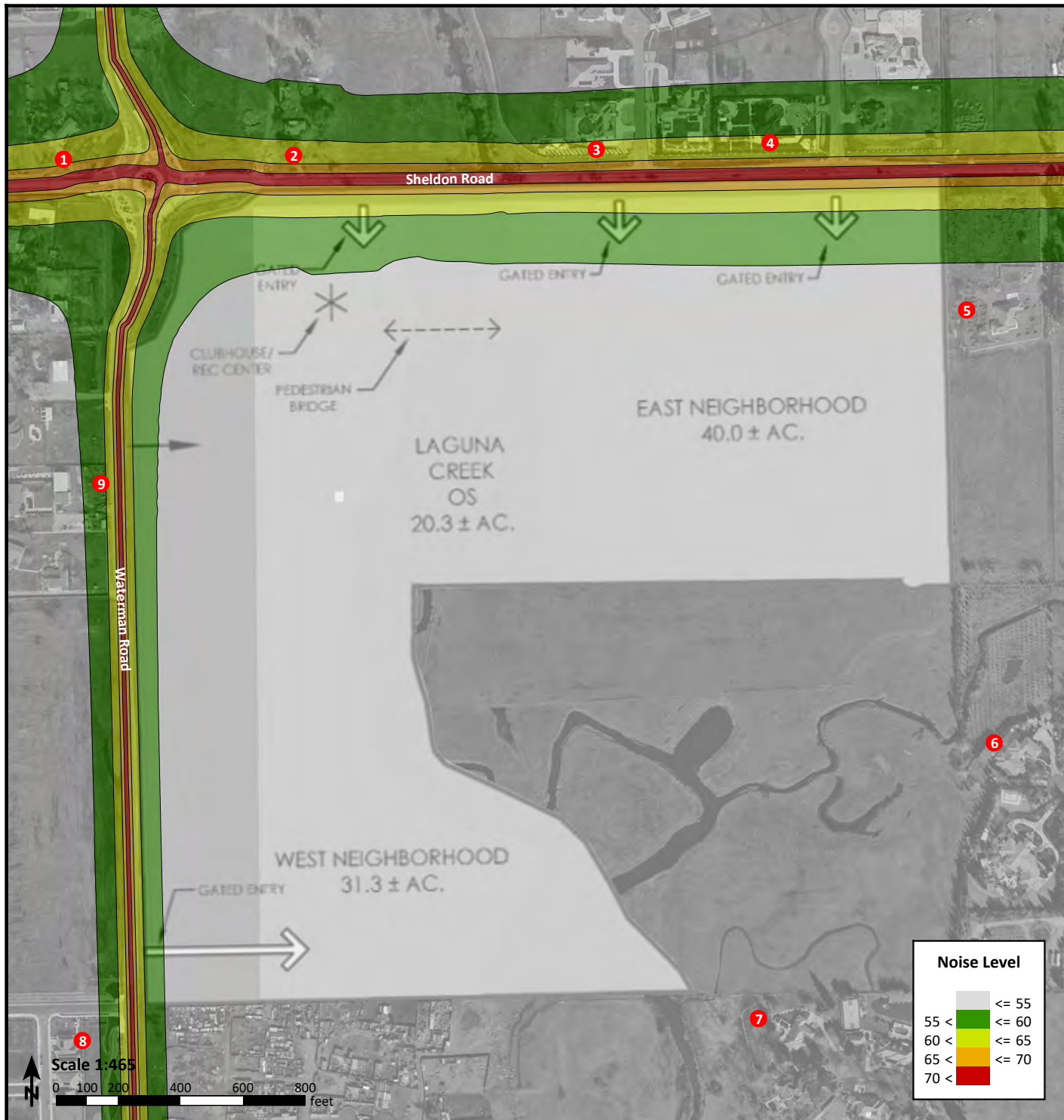
Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: 75 ft. to CL of Sheldon Rd.	Friday, June 16, 2023	64	62	59	80	56	47	74
LT-2: 160 ft. to CL of Waterman Rd.	Friday, June 16, 2023	56	52	49	72	50	45	67

Notes:

- All values shown in dBA
- Daytime hours: 7:00 a.m. to 10:00 p.m.
- Nighttime Hours: 10:00 p.m. to 7:00 a.m.
- Source: Saxelby Acoustics, 2023.

Saxelby Acoustics utilized the SoundPLAN modeling software and the ambient noise level data presented in **Table 2** to model existing noise levels at sensitive receptors in the project vicinity. This analysis is presented graphically in **Figure 3**.





Summer Villas EIR

City of Elk Grove, California

Figure 3

Existing Daytime Ambient
dBA Leq

Legend

● Receiver

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for existing and future, project and no-project conditions.

Existing, Existing Plus Approved Projects (EPAP), and Cumulative noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calven reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn} , it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the project traffic engineer (Fehr & Peers, 2024), truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing, EPAP, and Cumulative conditions which would result from the project are provided in terms of L_{dn} .

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations, sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables 3-5 summarize the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic modeling.

TABLE 3: PREDICTED TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors		
		Existing No Project	Existing + Project	Change
Bond Rd	West of Waterman Rd	60.7	60.8	0.1
Bradshaw Rd	North of Sheldon Rd	60.8	60.8	0.0
Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	58.2	58.4	0.2
Sheldon Rd	Waterman Rd to Bradshaw Rd	58.5	59.0	0.5
Sheldon Rd	West of Elk Grove Florin Rd	59.1	59.4	0.3
Waterman Rd	Calvine Rd to Sheldon Rd	52.6	52.8	0.2
Waterman Rd	Sheldon Rd to Bond Rd	57.9	58.1	0.2
Waterman Rd	North of Calvine Rd	57.3	57.4	0.1
Waterman Rd	South of Bond Rd	59.1	59.2	0.1

TABLE 4: EPAP TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L _{dn}) at Closest Sensitive Receptors		
		EPAP No Project	EPAP + Project	Change
Bond Rd	West of Waterman Rd	60.9	61.0	0.1
Bradshaw Rd	North of Sheldon Rd	60.8	60.9	0.1
Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	58.2	58.4	0.2
Sheldon Rd	Waterman Rd to Bradshaw Rd	58.5	59.0	0.5
Sheldon Rd	West of Elk Grove Florin Rd	59.0	59.4	0.4
Waterman Rd	Calvine Rd to Sheldon Rd	52.7	52.8	0.1
Waterman Rd	Sheldon Rd to Bond Rd	57.9	58.1	0.2
Waterman Rd	North of Calvin Rd	57.3	57.5	0.2
Waterman Rd	South of Bond Rd	59.2	59.3	0.1

TABLE 5: CUMULATIVE TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L _{dn}) at Closest Sensitive Receptors		
		Cumulative No Project	Cumulative + Project	Change
Bond Rd	West of Waterman Rd	61.3	61.4	0.1
Bradshaw Rd	North of Sheldon Rd	62.4	62.4	0.0
Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	58.9	59.1	0.2
Sheldon Rd	Waterman Rd to Bradshaw Rd	59.5	59.9	0.4
Sheldon Rd	West of Elk Grove Florin Rd	60.0	60.1	0.1
Waterman Rd	Calvine Rd to Sheldon Rd	53.9	54.1	0.2
Waterman Rd	Sheldon Rd to Bond Rd	59.1	59.2	0.1
Waterman Rd	North of Calvin Rd	61.2	61.3	0.1
Waterman Rd	South of Bond Rd	61.5	61.5	0.0

Based upon the **Tables 3-5** data, the proposed project is predicted to result in an increase in a maximum traffic noise level increase of 0.5 dBA.

EVALUATION OF PROJECT-GENERATED NOISE SOURCES ON EXISTING SENSITIVE RECEPTORS

The proposed project includes the development of several tennis courts and/or pickleball courts. The project description depicts four tennis courts. Saxelby Acoustics assumed that up to eight pickleball courts could fit in the same area based on similar projects. Pickleball gameplay produces higher noise levels than tennis; therefore, Saxelby Acoustics conservatively modeled eight pickleball courts operating simultaneously during a peak hour of use. It was assumed that no nighttime (10:00 p.m. to 7:00 a.m.) use of the courts would be permitted.

Pickleball gameplay typically produces noise levels of 56 dBA L_{eq} at 25 feet from the edge of the side of the court and 61 dBA L_{eq} at 25 feet from the ends of the court based upon Saxelby Acoustics measurements at similar facilities. It was assumed that each court would operate at this level of activity simultaneously during daytime (7:00 a.m. to 10:00 p.m.) hours.

It was also assumed that the proposed parking lot near the courts would contribute to project-generated noise levels. Saxelby Acoustics assumed up to 50 passenger vehicles could access the site in a peak hour. Two heavy truck movements were included to account for potential garbage collection. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks.

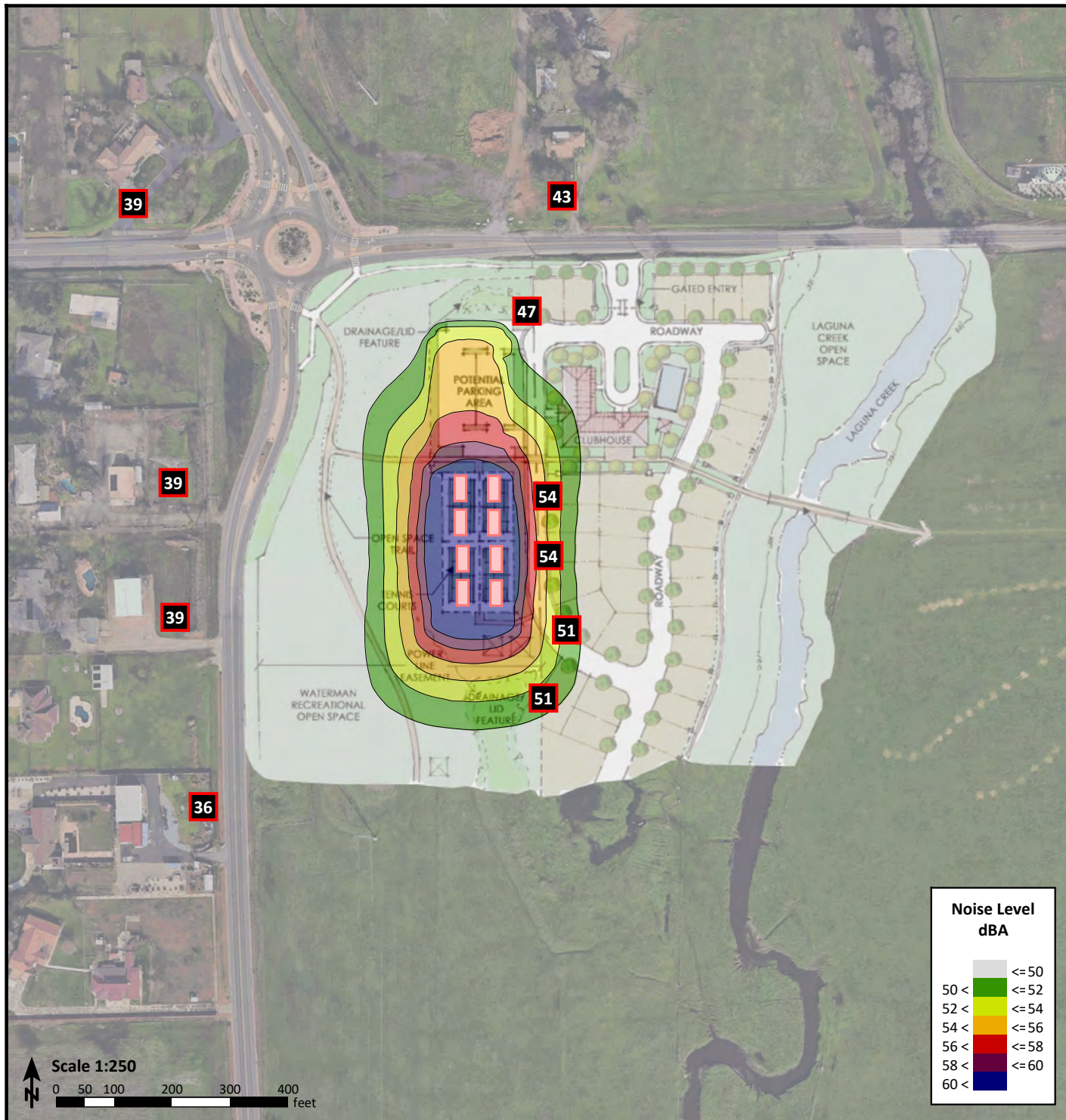
Saxelby Acoustics used the SoundPLAN noise modeling software to predict project-generated noise levels at off-site and on-site receptors. Inputs to the model include sound power levels for the sport courts and parking lots, proposed structures, topography, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:2024-01 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation. **Figure 4** shows the resulting noise level contours.

Summer Villas EIR

City of Elk Grove, California

Figure 4

Project Generated Noise Levels
(Daytime Leq, dBA)



Legend

6 57
11 58
12

Noise Level



Pickleball Courts

Noise Level dBA

<= 50
50 < <= 52
52 < <= 54
54 < <= 56
56 < <= 58
58 < <= 60
60 <

EVALUATION OF FUTURE TRANSPORTATION NOISE ON PROJECT SITE

Saxelby Acoustics used the SoundPLAN noise model to calculate traffic noise levels at the proposed residential uses due to traffic on Waterman Road and Sheldon Road. Inputs to the SoundPLAN noise model include results of the FHWA modeling using Cumulative Plus Project trip volumes provided by the traffic engineer (Fehr & Peers 2024), topography, existing structures, roadway elevations, and the proposed building pad elevations. Waterman Road was estimated to increase by +1.7 dBA and Sheldon Road was estimated to increase by +1.3 dBA based upon project traffic increases provided by the project traffic engineer (Fehr & Peers 2024). The results of this analysis are shown graphically on **Figure 5**.

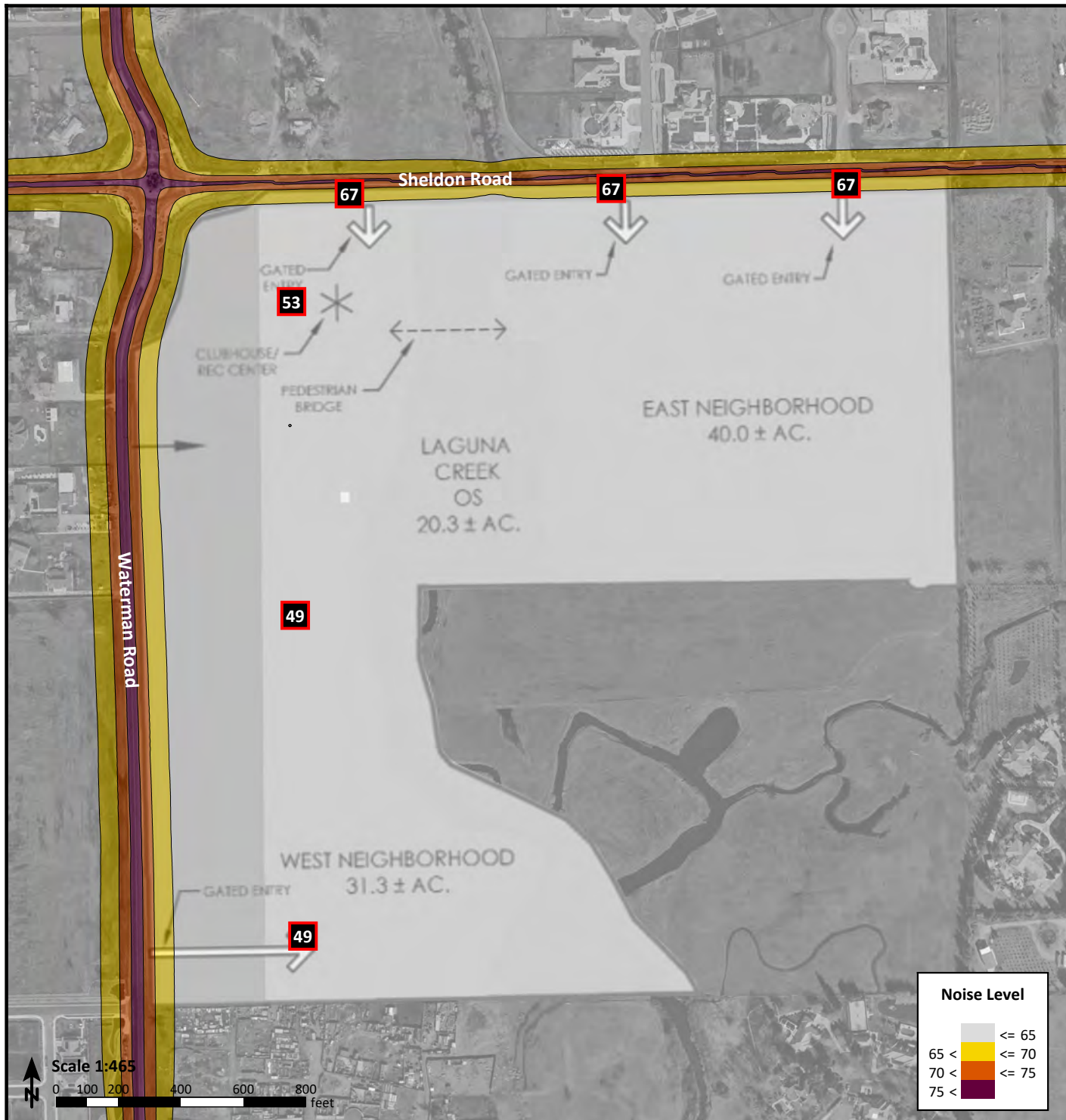


Summer Villas EIR

City of Elk Grove, California

Figure 5

Future Transportation Noise Levels
dBA Ldn



Legend

67
53
49

Noise Level

Noise Level

<= 65
65 < <= 70
70 < <= 75
75 <

CONSTRUCTION NOISE ENVIRONMENT

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to predict noise levels for standard construction equipment used for roadway improvement projects. The assessment of potential significant noise effects due to construction is based on the standards and procedures described in the Federal Transit Authority (FTA) guidance manual and FHWA's RCNM.

The RCNM is a Windows-based noise prediction model that enables the prediction of construction noise levels for a variety of construction equipment based on a compilation of empirical data and the application of acoustical propagation formulas. It enables the calculation of construction noise levels in more detail than the manual methods, which eliminates the need to collect extensive amounts of project-specific input data. RCNM allows for the modeling of multiple pieces of construction equipment working either independently or simultaneously, the character of noise emission, and the usage factors for each piece of equipment.

Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week), and the duration of the construction work.

Noise sources in the RCNM database include actual noise levels and equipment usage percentages. This source data was used in this construction noise analysis. **Table 6** shows predicted construction noise levels for each of the project construction phases.

TABLE 6: CONSTRUCTION EQUIPMENT NOISE LEVELS FOR PRIMARY CONSTRUCTION PHASES

Equipment	Quantity	Usage (%)	Maximum, L_{max} (dBA at 50 feet)	Hourly Average, L_{eq} (dBA at 50 feet)
Demolition				
Dozer	2	40	82	81
Excavator	3	40	81	82
Concrete Saw	1	20	90	83
Total:				87
Site Preparation				
Dozer	3	40	82	83
Tractor/Loader/Backhoe	4	40	84	86
Total:				88
Grading				
Excavator	2	40	81	80
Grader	1	40	85	81
Dozer	1	40	82	78
Scraper	2	40	84	83
Tractor/Loader/Backhoe	2	40	84	83
Total:				88

Building Construction				
Crane	1	16	81	73
Fork Lift	3	40	83	84
Generator	1	50	81	78
Tractor/Loader/Backhoe	3	40	84	85
Welder / Torch	1	40	74	70
Total:				88
Paving				
Paver	2	50	77	77
Paving Equipment	2	50	77	77
Roller	2	20	80	76
Total:				81
Architectural Coating				
Air Compressor	1	40	79	75
Total:				75
Linear, Drainage, Utilities, & Sub-Grade (Off-Site Construction)				
Air Compressor	1	40	79	75
Concrete Saw	1	20	90	83
Generator	1	50	81	78
Generator (<25KVA, VMS signs)	3	50	73	75
Tractor/Loader/Backhoe	2	40	84	83
Slurry Trenching Machine	1	50	80	77
Paving Equipment	1	50	77	74
Total:				88

Source: FHWA, Roadway Construction Noise Model (RCNM), January 2006.

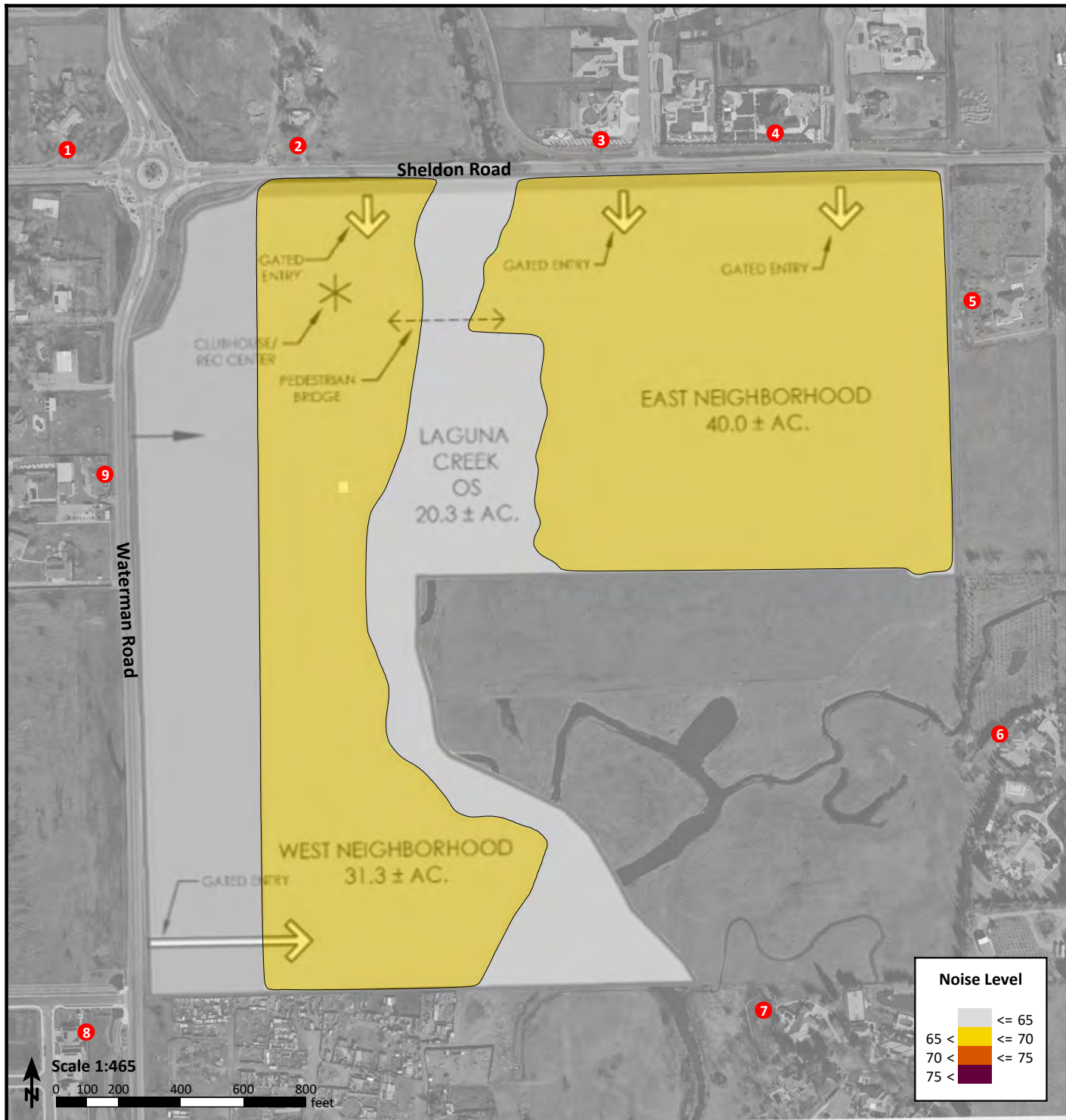
Based upon the **Table 6** data, the loudest phases of construction with an average noise exposure of 88 dBA L_{eq} at 50 feet would occur during site preparation, grading, building construction, and off-site Linear, Drainage, Utilities, and Sub-Grade. The results of the on-site construction noise analysis are shown graphically on **Figure 6**.

Summer Villas EIR

City of Elk Grove, California

Figure 6

Construction Noise
dBA Leq



Legend

● Receiver

Noise Level

	≤ 65
65 <	≤ 70
70 <	≤ 75
75 <	

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 7** shows the typical vibration levels produced by construction equipment.

TABLE 7: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal standards which apply to the proposed project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

LOCAL

City of Elk Grove General Plan

Policy N-1-1: New development of the uses listed in **Table 8** shall conform with the noise levels contained in the table. All indoor and outdoor areas shall be located, constructed, and/or shielded from noise sources in order to achieve compliance with the City's noise standards.

TABLE 8: MAXIMUM ALLOWABLE NOISE EXPOSURE, TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Area	Interior Spaces	
		L _{dn} , dB	L _{eq} , dB ^c
Residential	60 ^{d,g}	45	-
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (the passing of a single train, as opposed to relatively steady noise sources as roadways).	60 ^{d, g}	40 ^f	-
Transient Lodging	60 ^{e,g}	45	-
Hospitals, Nursing Homes	60 ^{e, g}	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	60 ^{d, g}	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45

- a. Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patios or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
- b. Transportation projects subject to Caltrans review or approval shall comply with the Federal Highway Administration noise standards for evaluation and abatement of noise impacts.
- c. As determined for a typical worst-case hour during periods of use.
- d. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
- e. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.
- f. The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.
- g. In cases where the existing ambient noise level exceeds 60 dBA, the maximum allowable project-related permanent increase in ambient noise levels shall be 3 dBA / L_{dn}.

Policy N-1-2: Where noise mitigation measures are required to achieve the standards of Tables 8-3 and 8-4, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design related noise mitigation measures, including the use of distance from noise sources, have been integrated into the project.

Policy N-2-2: The following criteria shall be used as CEQA significance thresholds for transportation and stationary noise sources:

- Where existing ambient noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise sensitive uses, a +5 dB L_{dn} increase in noise levels shall be considered significant; and
- Where existing ambient noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels shall be considered significant; and
- Where existing ambient noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels shall be considered significant. Public roadway improvements to alleviate traffic congestion and safety hazards shall utilize FHWA noise standards to allow a reasonable dollar threshold per dwelling to be used in the

evaluation and abatement of impacts.

- The standards outlined in Table 8-4 shall not apply to public projects to alleviate traffic congestion and safety hazards.

TABLE 9: NOISE LEVEL PERFORMANCE STANDARDS FOR NON-TRANSPORTATION NOISE SOURCES*

Performance Standards for Stationary Sources	Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Performance Standards for Typical Stationary Noise Sources ^a	Hourly Leq, dB	55 ^{c, d}	45 ^{c, d}
Performance Standards for Stationary Noise Sources Which Are Tonal, Impulsive, Repetitive, or Consist Primarily of Speech or Music ^b	Hourly Leq, dB	50 ^{c, d}	40 ^{c, d}

* Applies to noise-sensitive land uses only

a. These standards will apply generally to noise sources that are not tonal, impulsive, or repetitive in nature. Typical noise sources in this category would include HVAC systems, cooling towers, fans, and blowers.

b. These standards apply to noises which are tonal in nature, impulsive, repetitive, or which consist primarily of speech or music (e.g., humming sounds, outdoor speaker systems). Typical noise sources in this category include: pile drivers, drive-through speaker boxes, punch presses, steam valves, and transformer stations. HVAC/pool equipment are exempt from these standards.

c. These noise levels do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling). HVAC/pool equipment are exempt from these standards

d. The City may impose noise level standards which are more or less restrictive based upon determination of existing low or high ambient noise levels

City of Elk Grove Municipal Code

6.32.100 Exemptions.

E. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities only occur between the hours of 7:00 a.m. and 7:00 p.m. when located in close proximity to residential uses. Noise associated with these activities not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m. However, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 7:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an

amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 10**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 10 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 10: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: *Transportation Related Earthborne Vibrations*. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-c]).

Would the project:

- a. Generate a 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. Generate excessive groundborne vibration or groundborne noise levels?
- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has 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?

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The City of Elk Grove establishes the following criteria to determine significance of project-related noise level increases:

- Where existing ambient noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise sensitive uses, a +5 dB L_{dn} increase in noise levels shall be considered significant; and
- Where existing ambient noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels shall be considered significant; and
- Where existing ambient noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels shall be considered significant. Public roadway improvements to alleviate traffic congestion and safety hazards shall utilize FHWA noise standards to allow a reasonable dollar threshold per dwelling to be used in the evaluation and abatement of impacts.

Temporary Construction Noise Impacts

With temporary noise impacts (construction), identification of “substantial increases” depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the City of Elk Grove Municipal Code, construction activities operating between 7:00 a.m. and 7:00 p.m. when located in close proximity to residential uses are exempt from the ordinance.

The City has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years.

Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: *Would the project generate a 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?*

Traffic Noise Increases at Off-Site Receptors

The FICON guidelines specify criteria to determine the significance of traffic noise impacts. Where existing traffic noise levels are greater than 65 dB L_{dn} , a +1.5 dB L_{dn} increase in roadway noise levels will be considered significant. According to **Tables 3-5**, the maximum increase is traffic noise at the nearest sensitive receptor is predicted to be 0.5 dBA. Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***, and no mitigation is required.

Operational Noise at Existing Sensitive Receptors

Compliance with City of Elk Grove Noise Level Standards

The proposed project includes several sport courts. The project description states that these could include tennis or pickleball courts. Saxelby Acoustics conservatively assumed that all proposed sport courts would be pickleball courts. It was assumed that a maximum of eight courts would be installed.

The City of Elk Grove General Plan provides noise level standards for stationary sources such as pickleball. Pickleball noise is considered to be impulsive, so the applicable daytime (7:00 a.m. to 10:00 p.m.) noise level standard would be 50 dBA L_{eq} (**Table 9**).

As shown in **Figure 4**, the proposed pickleball courts and parking lots are predicted to generate up to 43 dBA L_{eq} at the off-site existing residences north and west of the proposed project. These levels comply with the City's standard of 50 dBA L_{eq} . Therefore, impacts resulting from project operational noise would be considered ***less-than-significant***.

Compliance with City standards at new on-site receptors are assessed separately below.

Long-Term Project-Related Noise Level Increases

To evaluate long-term noise level increases due to operation of the sport courts and parking lot, Saxelby Acoustics utilized the City's significance thresholds. This evaluation is based upon the hourly average L_{eq} instead of the day/night average L_{dn} because pickleball courts are not predicted to operate during nighttime hours. Where existing noise levels are less than 60 dBA L_{eq} , an increase of +5.0 dBA would be considered significant. Where existing noise levels are between 60 dBA L_{eq} and 65 dBA L_{eq} , a +3.0 dBA increase would be considered significant. Where existing noise levels are greater than 65 dBA L_{eq} , a +1.5 dBA increase would be considered significant.

As shown in **Figure 4**, the project is predicted to generate up to 43 dBA L_{eq} at the residence north of the project site. At this location, the ambient daytime noise level was measured to be 62 dBA L_{eq} . The logarithmic sum of

the existing noise levels (62 dBA L_{eq}) plus project-generated noise levels (43 dBA L_{eq}) would be 62.0 dBA L_{eq} . This would result in a 0.0 dBA increase above existing noise levels. Therefore, this would be a ***less-than-significant*** impact.

Construction Noise

On-Site Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. Construction noise levels were modeled using the input data shown in **Table 6** and evaluated for significance in **Table 11** below. **Figure 3** shows existing daytime (7:00 a.m. to 10:00 p.m.) ambient noise level contours and receptor locations. **Figure 6** shows modeled construction noise level contours as well as the locations of the analyzed receptors.

TABLE 11: CONSTRUCTION NOISE LEVEL INCREASES

Receptor	Existing Ambient (dBA L _{eq})	Construction Noise (dBA L _{eq})	Ambient + Construction (dBA L _{eq})	Difference (dBA L _{eq})
1	63.6	49.2	63.8	0.2
2	62.6	57.8	63.8	1.2
3	61.5	57.8	63.0	1.5
4	61.2	57.9	62.9	1.7
5	52.5	59.1	60.0	7.5
6	42.3	50.4	51.0	8.7
7	40.0	49.8	50.2	10.2
8	52.6	48.5	54.0	1.4
9	57.1	47.9	57.6	0.5

As shown in the table, construction of the project is not predicted to generate noise levels which exceed the existing average ambient noise level by greater than the +12.0 dBA threshold.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered **potentially significant**. Mitigation measure 1(a) would reduce construction noise levels at the existing sensitive receptors.

Off-Site Construction Noise

The proposed project includes off-site construction improvements to connect the project site to existing City water and sewer lines as well as improvements to the roundabouts at the intersections of Sheldon Road with Waterman Road and Bradshaw Road.

Construction of sewer and water lines will occur along Waterman Road and Sheldon Road. The preferred off-site water connection would occur along Waterman Road from Calvine Road to Sheldon Road. The alternative water connection would occur along the segment of Sheldon Road from Elk Grove Florin Road to Waterman Road. The proposed sewer main would be constructed along Sheldon Road from Elk Grove Florin Road to Waterman Road and along approximately 1,000 feet of Elk Grove Florin Road.

The improvements at the Sheldon Road/Waterman Road Roundabout would reconfigure the roundabout to a two-lane circulatory design and widen the approaches to accommodate an additional lane for all movements at the intersection. Widening will be limited to the intersection only, with the two lanes tapering off into one lane.

The improvements at the Sheldon Road/Bradshaw Road Roundabout would reconfigure the roundabout to include two travel lanes in the east-west direction. Widening will be limited to the intersection only, with the two east-west lanes tapering off into one lane.

As shown in **Table 6**, off-site Linear, Drainage, Utilities, & Sub-Grade construction improvements would produce approximately 88 dBA L_{eq} at 50 feet. The typical setback distance for residences along these roadways

is approximately 85 feet. Assuming an attenuation rate of -6 dB per doubling of distance, the predicted off-site construction noise levels would be 83.4 dBA L_{eq} at the residences. It was assumed that construction would occur during the hours of 7:00 a.m. to 7:00 p.m. only.

Table 2 shows the existing noise levels measured along Waterman Road and Sheldon Road. **Table 12** below shows the predicted increase over existing noise levels due to off-site construction.

TABLE 12: OFF-SITE CONSTRUCTION NOISE LEVEL INCREASES

Segment	Approximate Distance from Sensitive Receptors to Construction (feet)	Predicted Construction Noise Levels (dBA L_{eq})	Existing Daytime Ambient (dBA L_{eq}) ^{1,2}	Existing Daytime + Construction (dBA L_{eq})	Daytime Difference (dBA L_{eq})
Waterman Road	85	83.4	52.0	83.4	31.4
Sheldon Road	85	83.4	62.0	83.4	21.4
Elk Grove Florin Road	85	83.4	61.5	83.4	21.9
Sheldon Road/Waterman Road Roundabout	150	78.5	62.0	78.6	16.6
Sheldon Road/Bradshaw Road Roundabout	150	78.5	62.0	78.6	16.6

¹Existing noise levels at Sheldon Road and Waterman Road determined through ambient noise level survey (see **Table 2**).

²Existing noise levels at Elk Grove Florin Road were calculated using FHWA traffic noise model and volumes provided by traffic engineer.

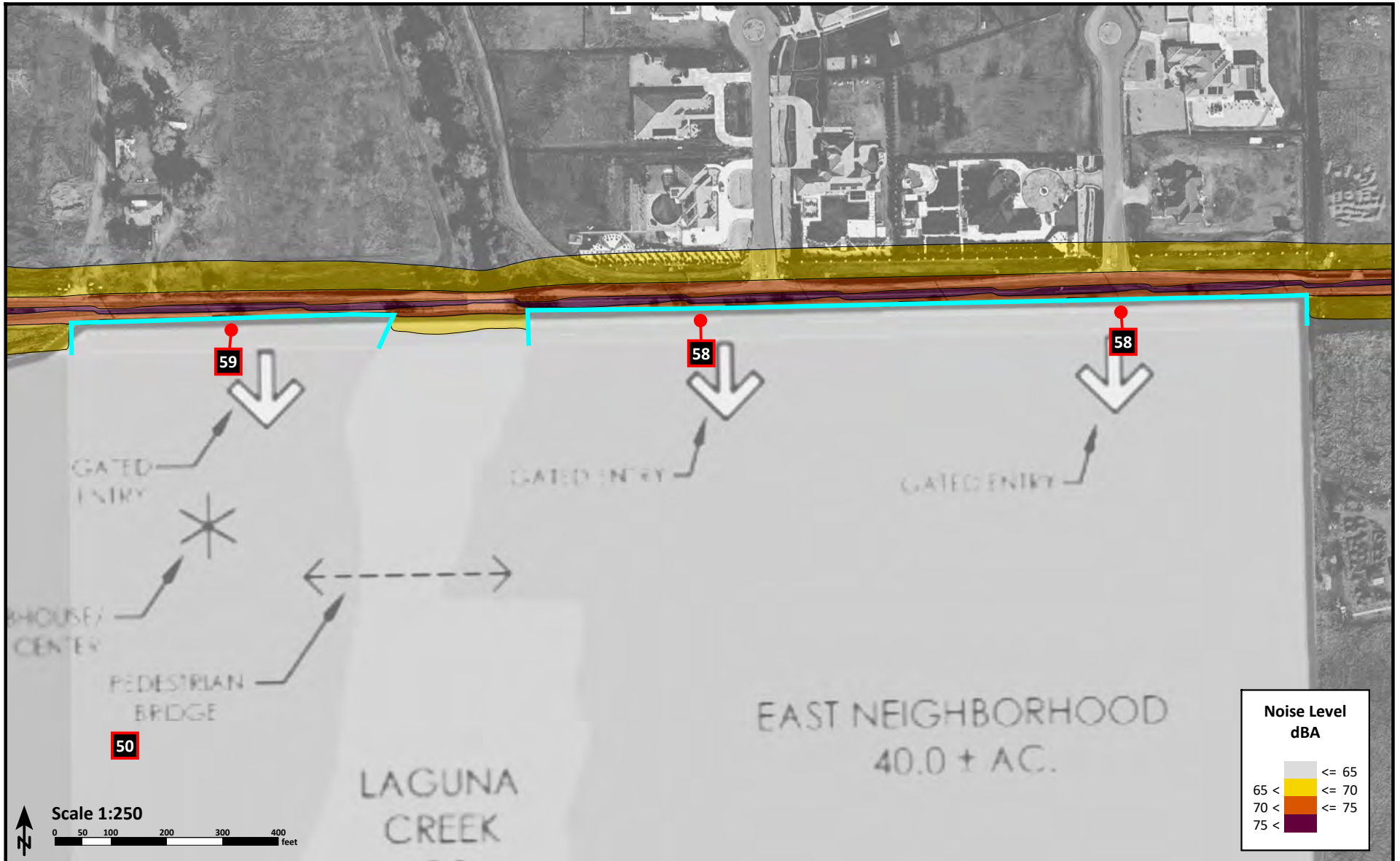
As shown in the table, construction of the project is predicted to generate noise levels which exceed the existing average ambient noise level by greater than the +12.0 dBA threshold. To reduce these increases, Saxelby Acoustics recommends Mitigation Measure 1(a) which specifies the use of 8-foot-tall temporary noise barriers at the boundary of the construction area adjacent to residential uses.

Transportation Noise on Project Site (Non-CEQA Issue)

Exterior Transportation Noise

Compliance with City's standards on new noise-sensitive receptors is not a CEQA consideration. However, this information is provided here so that a determination can be made regarding the ability of the proposed project to meet the requirements of the City of Elk Grove for exterior and interior noise levels at new sensitive uses proposed under the project.

As shown in **Figure 5**, traffic noise levels are predicted to be 67 dBA L_{dn} at the residences directly adjacent to Sheldon Road. This would exceed the City's noise level standard of 60 dBA L_{dn} . Therefore, Saxelby Acoustics recommends the construction of 8-foot-tall sound walls along Sheldon Road. **Figure 7** shows the location of the sound walls and resulting noise level contours. As shown in the figure, the sound walls would reduce noise levels in the outdoor areas of the new residences to 59 dBA L_{dn} or below. This would comply with the City's noise level standards.



Summer Villas EIR

City of Elk Grove, California

Figure 7
Future Transportation Noise Contours with Walls (dBA Ldn)

Legend

- 8' Sound Wall
- Noise Level



Interior Transportation Noise

As shown in **Figure 5**, the proposed project would be exposed to unshielded exterior noise levels of up to 67 dBA L_{dn} at the ground floor building facades closest to Sheldon Road. Second floor receivers are typically exposed to noise levels 2-3 dB higher than ground floor receivers, resulting in noise levels of up to 70 dBA L_{dn} at the second-floor facades. Where sound walls are utilized, exterior noise levels at ground floor receivers are predicted to be 59 dBA L_{dn} or less, as shown in **Figure 7**. Conventional construction typically achieves a 25 dBA noise level reduction (assuming a minimum of STC 29 rated glazing). This would result in first-floor interior noise levels of up to 34 dBA L_{dn} and second floor interior noise levels of up to 45 dBA L_{dn} , which complies with the City's interior noise level standard of 45 dBA L_{dn} . Therefore, no additional noise control measures would be required.

Stationary Noise on Project Site (Non-CEQA Issue)

The proposed project includes several sport courts. The project description states that these could include tennis or pickleball courts. Saxelby Acoustics conservatively assumed that all proposed sport courts would be pickleball courts. It was assumed that a maximum of eight courts would be installed.

The City of Elk Grove General Plan provides noise level standards for stationary sources such as pickleball. Pickleball noise is considered to be impulsive, so the applicable daytime (7:00 a.m. to 10:00 p.m.) noise level standard would be 50 dBA L_{eq} (**Table 9**).

As shown in **Figure 4**, the proposed pickleball courts and parking lots are predicted to generate up to 54 dBA L_{eq} at the on-site proposed residences. These levels exceed the City's standard of 50 dBA L_{eq} . Therefore, additional noise control measures would be required.

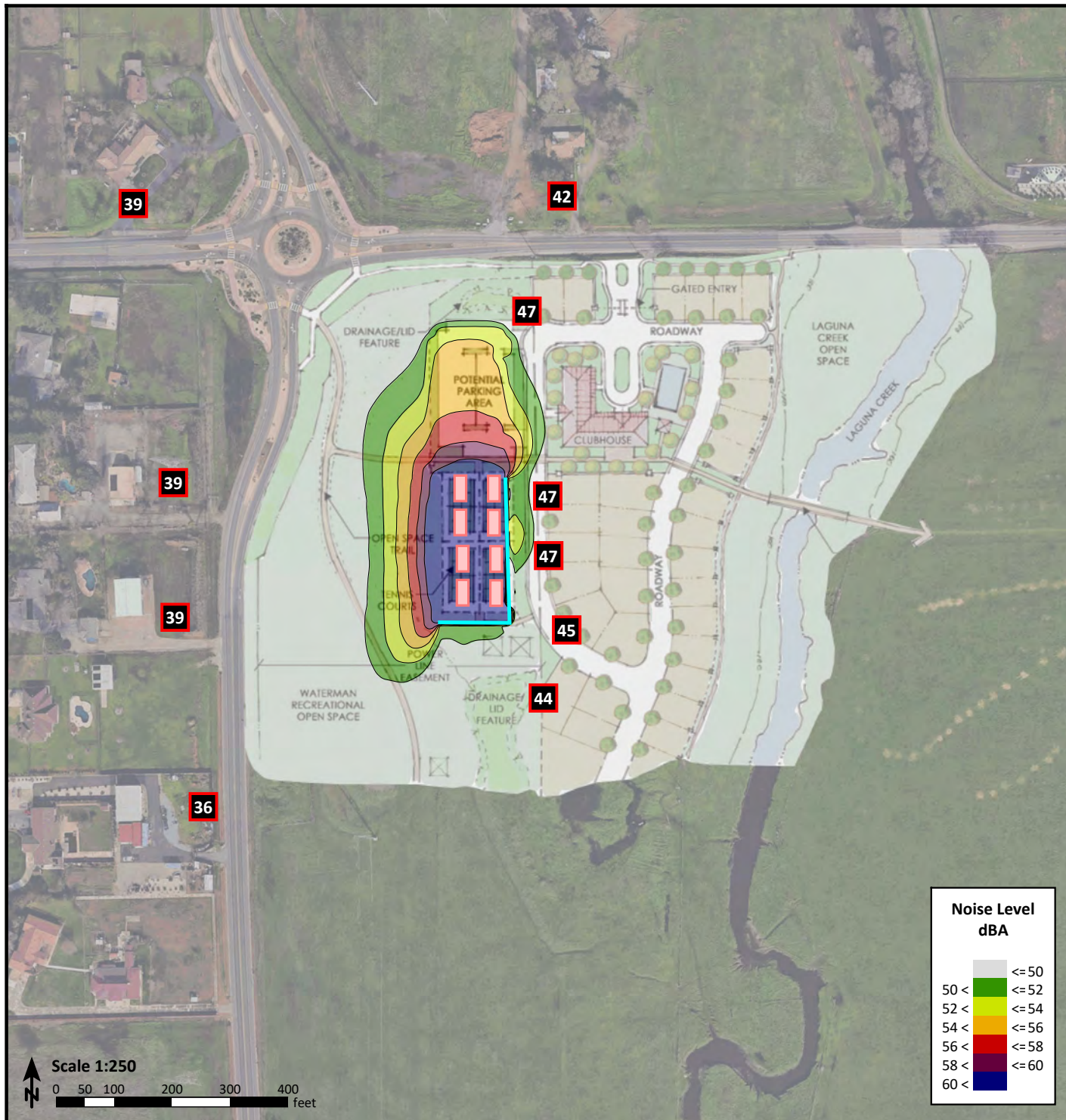
Saxelby Acoustics recommends the construction of 8-foot-tall sound barriers along the eastern and southern borders of the pickleball courts. These barriers may be comprised of CMU walls or acoustic curtains hung on chain link fencing. The barrier units should be installed such that there are no gaps between barrier units or gaps between the barrier and the ground. **Figure 8** shows the locations of the recommended barriers and resulting noise levels.

Summer Villas EIR

City of Elk Grove, California

Figure 8

Pickleball Noise Levels with Barriers
(Daytime Leq, dBA)



Legend

6 57
11 58
12

Noise Level

Pickleball Courts

Pickleball Courts

8' Sound Wall

8' Sound Wall

Noise Level dBA

<= 50
50 < <= 52
52 < <= 54
54 < <= 56
56 < <= 58
58 < <= 60
60 <

Mitigation Measures

1(a) The City shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- For off-site construction activities, the proposed project shall incorporate the use of 8-foot-tall temporary sound barriers between the existing sensitive receptors and construction activities. The sound barrier fencing should consist of ½" plywood or minimum STC 27 sound curtains placed to shield nearby sensitive receptors. The plywood barrier should be free from gaps, openings, or penetrations to ensure maximum performance.
- On-site construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7 AM and 7 PM daily when located in close proximity to residential uses.
- Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- When not in use, motorized construction equipment shall not be left idling for more than 5 minutes.
- Stationary equipment (power generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses or sufficiently shielded to reduce noise-related impacts.

Timing/Implementation: Implemented prior to approval of grading and/or building permits

Enforcement/Monitoring: City of Elk Grove Community Development Services Department

Recommended Condition of Approval

Prior to approval of project improvement plans, the plans for the proposed project shall show that the outdoor activity areas of residential uses along Sheldon Road shall be shielded from the Road through the use of minimum eight-foot-tall sound walls per the approval of the City Engineer. The sound wall may be constructed of combination of earthen berm and masonry wall to achieve the required wall height. Wall heights shall be measured relative to either pad or roadway centerline elevations, whichever is higher. This shall apply to all first-row receiver rooms with a view of Sheldon Road. Other types of barriers may be employed but shall be reviewed by an acoustical engineer prior to being constructed.

*Additionally, eight-foot-tall sound barriers should be installed at the eastern and southern boundaries of the proposed sports courts as shown in **Figure 8** to reduce recreational noise levels at the proposed residences to below the City's 50 dBA L_{eq} noise level standard. These barriers may be comprised of CMU walls or acoustic curtains hung on chain link fencing. The barrier units should be installed such that there are no gaps between barrier units or gaps between the barrier and the ground.*

Significance After Mitigation

Off-Site Construction

The recommended temporary construction noise barriers detailed in Mitigation Measures 1(a) are expected to achieve an average noise level reduction of -5 dBA. The resulting noise levels are listed in **Table 13** below:

TABLE 13: OFF-SITE CONSTRUCTION NOISE LEVEL INCREASES

Segment	Approximate Distance from Sensitive Receptors to Construction (feet)	Predicted Construction Noise Levels (dBA L _{eq})	Existing Daytime Ambient (dBA L _{eq}) ^{1,2}	Existing Daytime + Construction (dBA L _{eq})	Daytime Difference (dBA L _{eq})
Waterman Road	85	78.4	52.0	78.4	26.4
Sheldon Road	85	78.4	62.0	78.5	16.5
Elk Grove Florin Road	85	78.4	61.5	78.5	17.0
Sheldon Road/Waterman Road Roundabout	150	73.5	62.0	73.8	11.8
Sheldon Road/Bradshaw Road Roundabout	150	73.5	62.0	73.8	11.8

¹Existing noise levels at Sheldon Road and Waterman Road determined through ambient noise level survey (see **Table 2**).

²Existing noise levels at Elk Grove Florin Road were calculated using FHWA traffic noise model and volumes provided by traffic engineer.

As shown in table, the temporary barriers would not reduce all of the construction-related noise increases to less-than-significant. The resulting increase over ambient of up to 26.4 dBA is greater than the 12 dBA test of significance. Therefore, this would be considered a **significant and unavoidable** impact.

Impact 2: **Would the project generate excessive groundborne vibration or groundborne noise levels?**

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 7** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

Impact 3: *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has 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?*

There are no airports within two miles of the project vicinity. Therefore, this impact is not applicable to the proposed project.



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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B: Continuous Long-Term Ambient Noise Measurement Results



Appendix B1: Continuous Noise Monitoring Results

Site: LT-1

Project: Summer Villas EIR

Location: Northern Project Boundary

Coordinates: (38.4379201, -121.3481425)

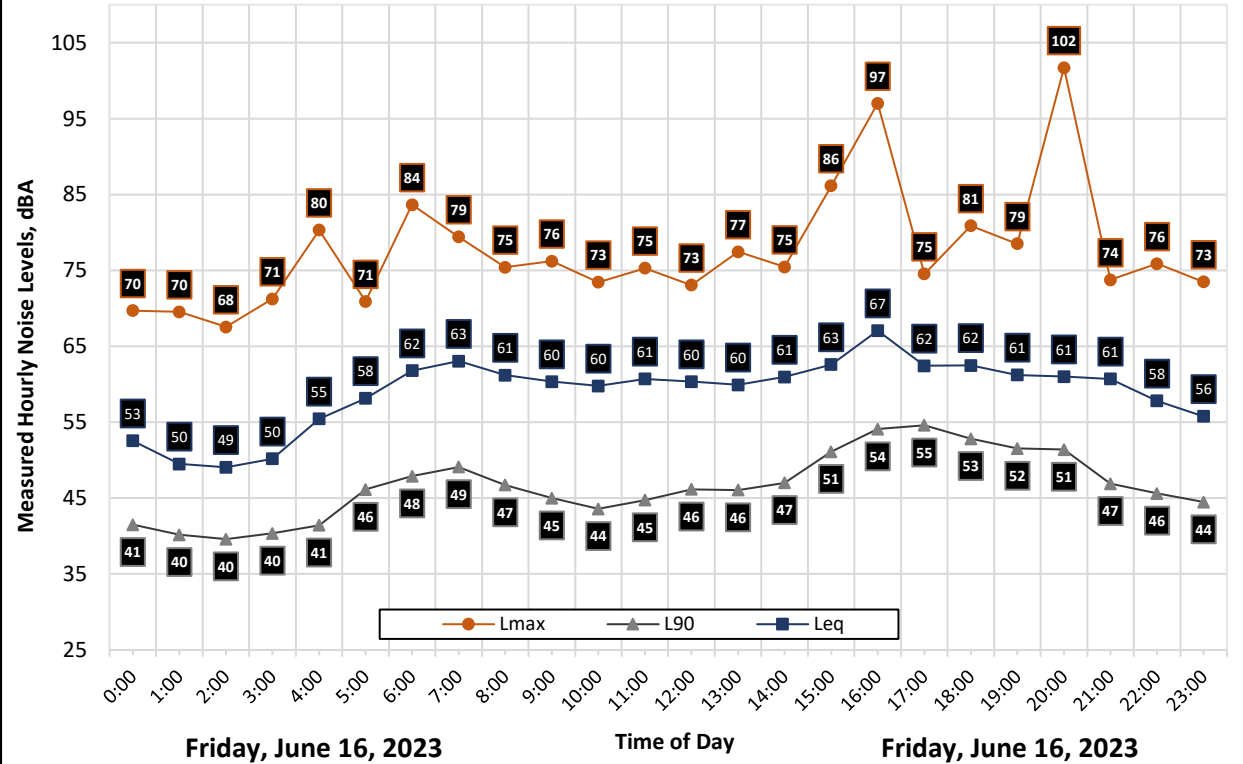
Meter: LDL 820-3

Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, June 16, 2023	0:00	53	70	44	41
Friday, June 16, 2023	1:00	50	70	42	40
Friday, June 16, 2023	2:00	49	68	41	40
Friday, June 16, 2023	3:00	50	71	42	40
Friday, June 16, 2023	4:00	55	80	46	41
Friday, June 16, 2023	5:00	58	71	53	46
Friday, June 16, 2023	6:00	62	84	57	48
Friday, June 16, 2023	7:00	63	79	61	49
Friday, June 16, 2023	8:00	61	75	59	47
Friday, June 16, 2023	9:00	60	76	57	45
Friday, June 16, 2023	10:00	60	73	57	44
Friday, June 16, 2023	11:00	61	75	58	45
Friday, June 16, 2023	12:00	60	73	58	46
Friday, June 16, 2023	13:00	60	77	57	46
Friday, June 16, 2023	14:00	61	75	59	47
Friday, June 16, 2023	15:00	63	86	60	51
Friday, June 16, 2023	16:00	67	97	61	54
Friday, June 16, 2023	17:00	62	75	62	55
Friday, June 16, 2023	18:00	62	81	61	53
Friday, June 16, 2023	19:00	61	79	59	52
Friday, June 16, 2023	20:00	61	102	60	51
Friday, June 16, 2023	21:00	61	74	57	47
Friday, June 16, 2023	22:00	58	76	51	46
Friday, June 16, 2023	23:00	56	73	49	44

Statistics	L _{eq}	L _{max}	L ₅₀	L ₉₀
Day Average	62	80	59	49
Night Average	56	74	47	43
Day Low	60	73	57	44
Day High	67	102	62	55
Night Low	49	68	41	40
Night High	62	84	57	48
Ldn	64	Day %		88
CNEL	64	Night %		12

Measured Ambient Noise Levels vs. Time of Day



Appendix B2: Continuous Noise Monitoring Results

Site: LT-2

Project: Summer Villas EIR

Location: Southwest of Project Boundary

Coordinates: (38.4316108, -121.3537809)

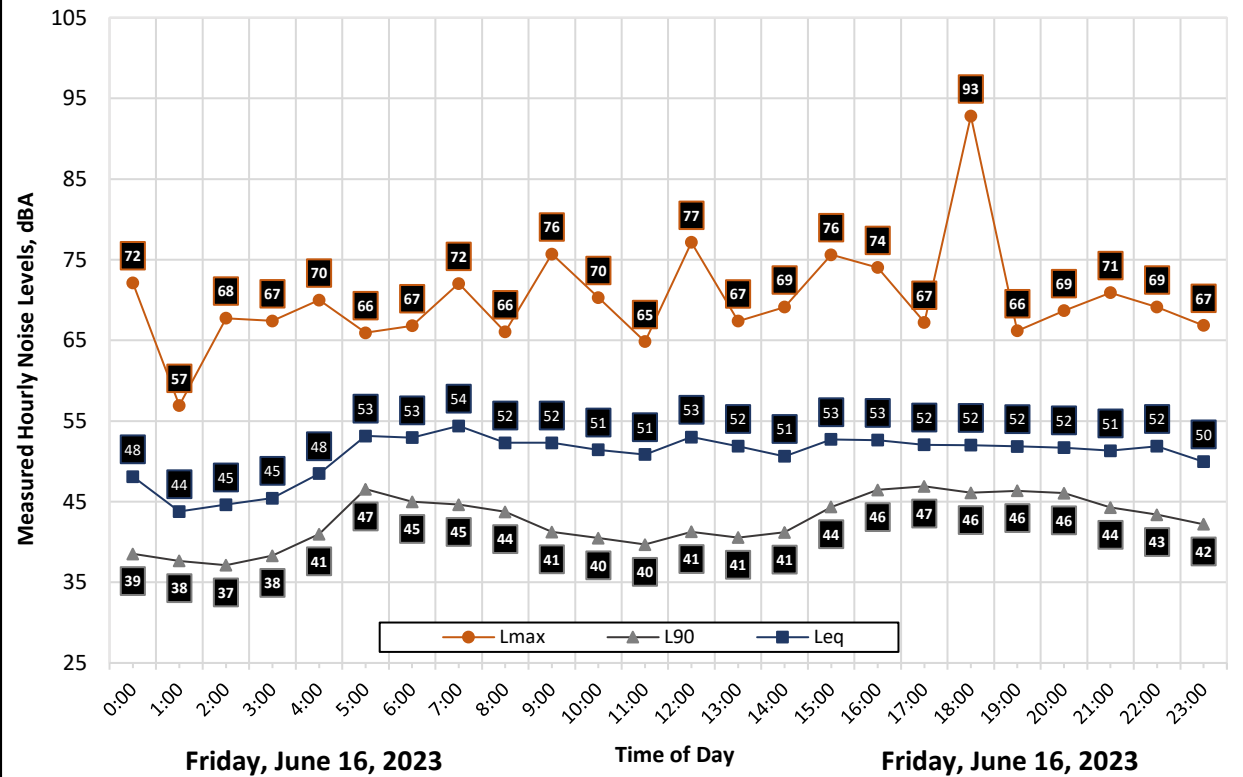
Meter: LDL 820-4

Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, June 16, 2023	0:00	48	72	42	39
Friday, June 16, 2023	1:00	44	57	40	38
Friday, June 16, 2023	2:00	45	68	39	37
Friday, June 16, 2023	3:00	45	67	41	38
Friday, June 16, 2023	4:00	48	70	45	41
Friday, June 16, 2023	5:00	53	66	50	47
Friday, June 16, 2023	6:00	53	67	50	45
Friday, June 16, 2023	7:00	54	72	51	45
Friday, June 16, 2023	8:00	52	66	50	44
Friday, June 16, 2023	9:00	52	76	49	41
Friday, June 16, 2023	10:00	51	70	48	40
Friday, June 16, 2023	11:00	51	65	48	40
Friday, June 16, 2023	12:00	53	77	48	41
Friday, June 16, 2023	13:00	52	67	48	41
Friday, June 16, 2023	14:00	51	69	48	41
Friday, June 16, 2023	15:00	53	76	49	44
Friday, June 16, 2023	16:00	53	74	50	46
Friday, June 16, 2023	17:00	52	67	51	47
Friday, June 16, 2023	18:00	52	93	50	46
Friday, June 16, 2023	19:00	52	66	51	46
Friday, June 16, 2023	20:00	52	69	50	46
Friday, June 16, 2023	21:00	51	71	50	44
Friday, June 16, 2023	22:00	52	69	49	43
Friday, June 16, 2023	23:00	50	67	46	42

Statistics	L _{eq}	L _{max}	L ₅₀	L ₉₀
Day Average	52	72	49	44
Night Average	50	67	45	41
Day Low	51	65	48	40
Day High	54	93	51	47
Night Low	44	57	39	37
Night High	53	72	50	47
Ldn	56	Day %		77
CNEL	56	Night %		23

Measured Ambient Noise Levels vs. Time of Day



Appendix C: Traffic Noise Calculation Inputs and Results



Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: Existing Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	22,530	85	0	15	1.0%	1.0%	35	70	-5	169	78	36	60.7
2	Bradshaw Rd	North of Sheldon Rd	24,170	85	0	15	1.0%	1.0%	50	280	0	317	147	68	60.8
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	13,850	85	0	15	1.0%	1.0%	40	200	0	151	70	32	58.2
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	10,760	85	0	15	1.0%	1.0%	40	160	0	127	59	27	58.5
5	Sheldon Rd	West of Elk Grove Florin Rd	19,140	85	0	15	1.0%	1.0%	40	100	-5	187	87	40	59.1
6	Waterman Rd	Calvine Rd to Sheldon Rd	11,690	85	0	15	1.0%	1.0%	45	235	-5	164	76	35	52.6
7	Waterman Rd	Sheldon Rd to Bond Rd	14,460	85	0	15	1.0%	1.0%	45	260	0	189	88	41	57.9
8	Waterman Rd	North of Calvine Rd	9,420	85	0	15	1.0%	1.0%	45	100	-5	142	66	31	57.3
9	Waterman Rd	South of Bond Rd	14,280	85	0	15	1.0%	1.0%	45	100	-5	187	87	40	59.1

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: Existing Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	22,790	85	0	15	1.0%	1.0%	35	70	-5	170	79	37	60.8
2	Bradshaw Rd	North of Sheldon Rd	24,340	85	0	15	1.0%	1.0%	50	280	0	319	148	69	60.8
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	14,650	85	0	15	1.0%	1.0%	40	200	0	157	73	34	58.4
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	12,060	85	0	15	1.0%	1.0%	40	160	0	138	64	30	59.0
5	Sheldon Rd	West of Elk Grove Florin Rd	20,360	85	0	15	1.0%	1.0%	40	100	-5	195	91	42	59.4
6	Waterman Rd	Calvine Rd to Sheldon Rd	12,150	85	0	15	1.0%	1.0%	45	235	-5	168	78	36	52.8
7	Waterman Rd	Sheldon Rd to Bond Rd	14,980	85	0	15	1.0%	1.0%	45	260	0	193	90	42	58.1
8	Waterman Rd	North of Calvine Rd	9,790	85	0	15	1.0%	1.0%	45	100	-5	145	67	31	57.4
9	Waterman Rd	South of Bond Rd	14,530	85	0	15	1.0%	1.0%	45	100	-5	189	88	41	59.2

Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: EPAP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	23,490	85	0	15	1.0%	1.0%	35	70	-5	173	80	37	60.9
2	Bradshaw Rd	North of Sheldon Rd	24,160	85	0	15	1.0%	1.0%	50	280	0	317	147	68	60.8
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	13,900	85	0	15	1.0%	1.0%	40	200	0	151	70	33	58.2
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	10,800	85	0	15	1.0%	1.0%	40	160	0	128	59	28	58.5
5	Sheldon Rd	West of Elk Grove Florin Rd	18,800	85	0	15	1.0%	1.0%	40	100	-5	185	86	40	59.0
6	Waterman Rd	Calvine Rd to Sheldon Rd	11,780	85	0	15	1.0%	1.0%	45	235	-5	164	76	35	52.7
7	Waterman Rd	Sheldon Rd to Bond Rd	14,600	85	0	15	1.0%	1.0%	45	260	0	190	88	41	57.9
8	Waterman Rd	North of Calvin Rd	9,490	85	0	15	1.0%	1.0%	45	100	-5	142	66	31	57.3
9	Waterman Rd	South of Bond Rd	14,700	85	0	15	1.0%	1.0%	45	100	-5	191	88	41	59.2

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: EPAP Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	23,850	85	0	15	1.0%	1.0%	35	70	-5	175	81	38	61.0
2	Bradshaw Rd	North of Sheldon Rd	24,380	85	0	15	1.0%	1.0%	50	280	0	319	148	69	60.9
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	14,700	85	0	15	1.0%	1.0%	40	200	0	157	73	34	58.4
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	12,100	85	0	15	1.0%	1.0%	40	160	0	138	64	30	59.0
5	Sheldon Rd	West of Elk Grove Florin Rd	20,600	85	0	15	1.0%	1.0%	40	100	-5	197	91	42	59.4
6	Waterman Rd	Calvine Rd to Sheldon Rd	12,240	85	0	15	1.0%	1.0%	45	235	-5	169	78	36	52.8
7	Waterman Rd	Sheldon Rd to Bond Rd	15,120	85	0	15	1.0%	1.0%	45	260	0	194	90	42	58.1
8	Waterman Rd	North of Calvin Rd	9,830	85	0	15	1.0%	1.0%	45	100	-5	146	68	31	57.5
9	Waterman Rd	South of Bond Rd	14,950	85	0	15	1.0%	1.0%	45	100	-5	193	89	42	59.3

Appendix C-5

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: Cumulative Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	25,800	85	0	15	1.0%	1.0%	35	70	-5	184	86	40	61.3
2	Bradshaw Rd	North of Sheldon Rd	34,550	85	0	15	1.0%	1.0%	50	280	0	403	187	87	62.4
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	16,500	85	0	15	1.0%	1.0%	40	200	0	169	79	37	58.9
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	13,400	85	0	15	1.0%	1.0%	40	160	0	148	68	32	59.5
5	Sheldon Rd	West of Elk Grove Florin Rd	23,520	85	0	15	1.0%	1.0%	40	100	-5	215	100	46	60.0
6	Waterman Rd	Calvine Rd to Sheldon Rd	15,800	85	0	15	1.0%	1.0%	45	235	-5	200	93	43	53.9
7	Waterman Rd	Sheldon Rd to Bond Rd	18,900	85	0	15	1.0%	1.0%	45	260	0	225	105	49	59.1
8	Waterman Rd	North of Calvin Rd	23,250	85	0	15	1.0%	1.0%	45	100	-5	259	120	56	61.2
9	Waterman Rd	South of Bond Rd	24,800	85	0	15	1.0%	1.0%	45	100	-5	270	125	58	61.5

Appendix C-6

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 230512 Summer Villas EIR

Description: Cumulative Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Bond Rd	West of Waterman Rd	26,160	85	0	15	1.0%	1.0%	35	70	-5	186	86	40	61.4
2	Bradshaw Rd	North of Sheldon Rd	34,760	85	0	15	1.0%	1.0%	50	280	0	404	188	87	62.4
3	Sheldon Rd	Elk Grove Florin Rd to Waterman Rd	17,300	85	0	15	1.0%	1.0%	40	200	0	175	81	38	59.1
4	Sheldon Rd	Waterman Rd to Bradshaw Rd	14,700	85	0	15	1.0%	1.0%	40	160	0	157	73	34	59.9
5	Sheldon Rd	West of Elk Grove Florin Rd	24,220	85	0	15	1.0%	1.0%	40	100	-5	219	102	47	60.1
6	Waterman Rd	Calvine Rd to Sheldon Rd	16,260	85	0	15	1.0%	1.0%	45	235	-5	204	95	44	54.1
7	Waterman Rd	Sheldon Rd to Bond Rd	19,420	85	0	15	1.0%	1.0%	45	260	0	230	107	49	59.2
8	Waterman Rd	North of Calvine Rd	23,590	85	0	15	1.0%	1.0%	45	100	-5	261	121	56	61.3
9	Waterman Rd	South of Bond Rd	25,050	85	0	15	1.0%	1.0%	45	100	-5	272	126	59	61.5

Appendix L



Technical Memorandum

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: Gyan Kalwani, Sheldon Business Park

From: Tom Balbierz, PE **CC:** Bryan Wilson, Sheldon Business Park

Date: February 20, 2025

Subject: Summer Villas at Waterman Road
Domestic Water Demand Analysis

Introduction

The purpose of this analysis is to confirm that proposed project water demand is suitably met by the proposed water infrastructure and further supported by the land use demand assumed by the Zone 40 Water Supply Master Plan dated September 2016.

The project site is located on the southeast corner of Waterman Road and Sheldon Road in the City of Elk Grove. The property encompasses approximately 111 acres and is bounded by Sheldon Road to the north, Waterman Road to the west, an existing rural residential lot to the east, and Laguna Creek and existing rural residential/industrial development to the south. Laguna Creek bisects the site north to south. Multiple existing overhead power lines also traverse the site north to south along Waterman Road. The site is proposed for development of a medium density residential retirement community occupying developable area both east and west of Laguna Creek.

The project site is located within Service Area 2 of the Elk Grove Water District (EGWD). The EGWD provides water through a series of groundwater wells and a treatment and storage facility on Railroad Street. In addition, EGWD also has a long term agreement with Sacramento County Water Agency (SCWA) to purchase additional water supplies. Existing backbone water infrastructure in the area is limited to an existing SCWA 18" transmission main stub at the intersection of Waterman Road and Elliott Springs Drive near the southwest corner of the project site. Consistent with the Zone 40 Water Supply Master Plan, backbone water infrastructure in support of the project includes extending this 18" transmission main north in Waterman Road to tie into existing water facilities at/near Calvine Road (approximately 8,000 linear feet). Additionally, an SCWA 24" water transmission will be installed in Sheldon Road across the norther project frontage (approximately 2,600 linear feet) connecting to the 18" transmission main in Waterman Road.

Water Demand Factors

The SCWA transmission main network is based upon the Zone 40 Water Supply Master Plan dated September 2016. Water demands for the proposed system are based on the area of land to be served multiplied by a demand factor which is based on a known/assumed land use. The applied water demand factors are summarized in Table 3-11 Buildout Unit Water Demand Factors within the Zone 40 Water Supply Master Plan and included within Table 1 below.

Water Demand Comparison

In order to compare the overall project water demand, the acreage for each land use is multiplied by the appropriate water demand factor. The 2016 Zone 40 master plan identifies the entire project area as Public Recreation.

Table 1: Summer Villas Water Demand Comparison (per SCWA Water Supply Master Plan)

Land Use	Gross Unit Water Demand Factor (ac-ft/acre/yr) ¹	2016 SCWA WSMP		Summer Villas (Proposed)	
		Area (acres)	Water Demand (ac-ft/yr)	Area (acres)	Water Demand (ac-ft/yr)
Rural Estate	1.37	111	152		
Single Family	2.13				
Multi Family – Low Density	2.44			71.3	174
Multi Family – High Density	3.33				
Commercial	2.02				
Industrial	2.02				
Public	0.81			19.4 ²	16
Public Recreation	2.8				
Mixed Land Use	2.15				
Right of Way	0.18				
Self Suppt./Supp. by Others					
Non-Irrigated	--			20.3 ³	0
Industrial- Unutilized	--				
Agricultural	--				
Total Area & Demand		111	152	111	190

As Table 1 above indicates, the proposed Summer Villas project, when assessed independently from other adjacent development, produces a demand increase over and above that assumed by the Zone 40 Water Supply Master Plan. As such, we need to assess further outside the project boundaries to assess whether regional demands are truly increasing.

Sheldon Park Estates is an existing rural residential development located immediately north of Summer Villas on the north side of Sheldon Road. Units 1 through 3 of Sheldon Park includes 36 rural residential lots occupying approximately 79 acres. The residences are served by individual on site water wells and septic systems. Drainage is provided by roadside ditches and related drainage culverts.

The Zone 40 Water Supply Master Plan's projected water demand for Sheldon Park is also based on a rural estate demand factor. However, since this project is being developed with individual on-site wells, the net demand on the proposed Zone 40 backbone network can be assumed to be zero. As such, we can quantify the reduction in demand for Sheldon Park and compare it to the estimated Summer Villa increases to determine if a regional increase is present. These calculations are summarized in Table 2 below.

- 1 Water demand factors per Zone 40 Water Supply Master Plan dated September 2016.
- 2 Open space located beneath existing power lines.
- 3 Laguna Creek

Table 2: Sheldon Park Water Demand Comparison (per SCWA Water Supply Master Plan)

Land Use	Gross Unit Water Demand Factor (ac-ft/acre/yr) ⁴	2016 SCWA WSMP		Sheldon Park Units 1-3 (Proposed)	
		Area (acres)	Water Demand (ac-ft/yr)	Area (acres)	Water Demand (ac-ft/yr)
Rural Estate	1.37	79	108		
Single Family	2.13				
Multi Family – Low Density	2.44				
Multi Family – High Density	3.33				
Commercial	2.02				
Industrial	2.02				
Public	0.81				
Public Recreation	2.8				
Mixed Land Use	2.15				
Right of Way	0.18				
Self Suppt./Supp. by Others				79 ⁵	0
Non-Irrigated	--				0
Industrial- Unutilized	--				
Agricultural	--				
Total Area & Demand		79	108	79	0

Conclusions

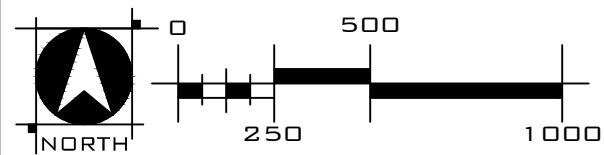
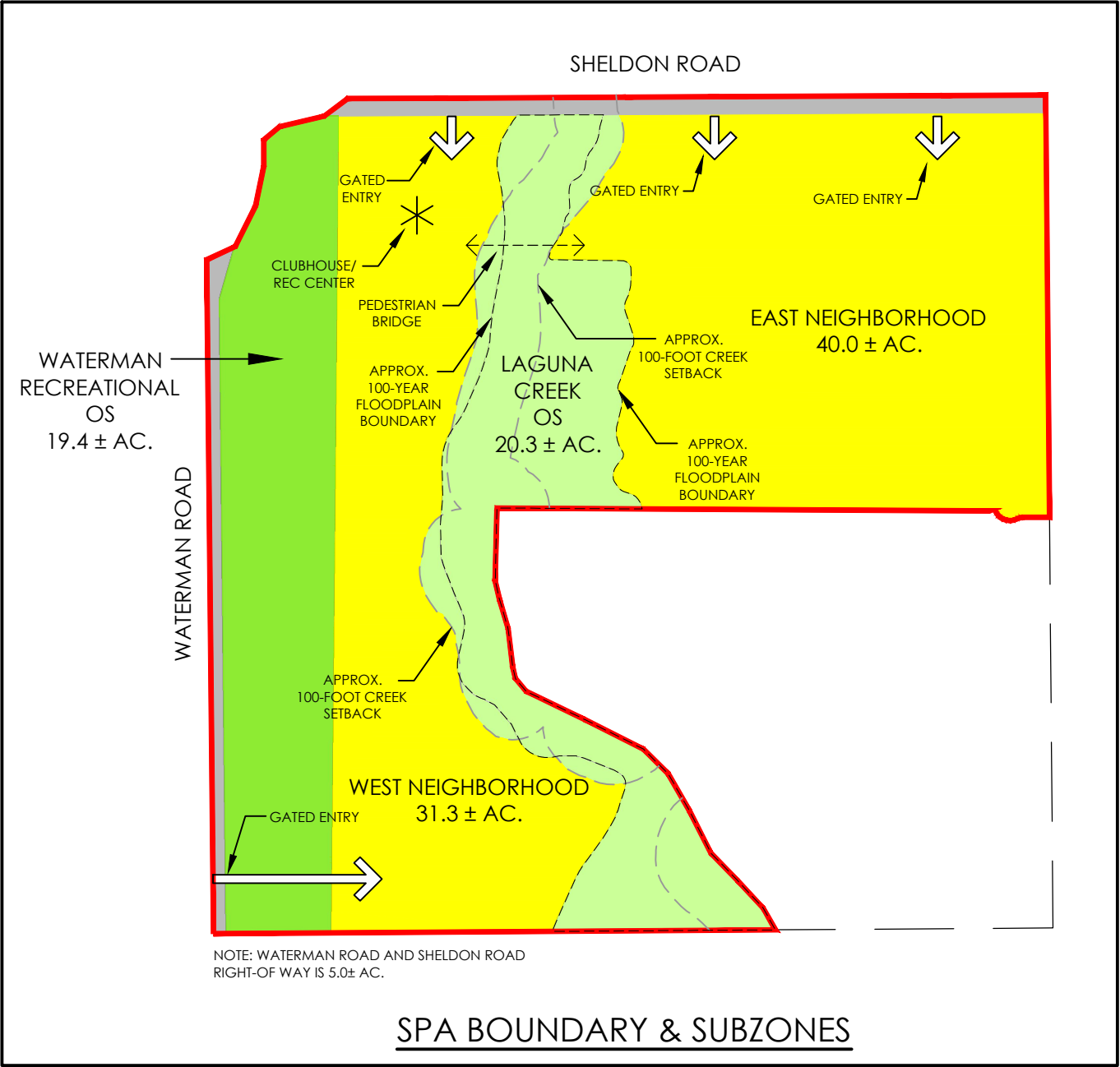
As clearly depicted by the Table 1 and 2 Summaries, the total combined project water demands for Summer Villas and Sheldon Park Units 1 through 3 (190+0=190 ac-ft/yr) is significantly less than assumed by the Zone 40 Water Supply Master Plans (152+108=260 ac-ft/yr). Previously modeled demands associated with the Zone 40 Water Supply Master Plan more than compensate for the demands associated with Summer Villas and Sheldon Park Units 1-3 projects.

Attachments

- Summer Villas Subzone Exhibit

4 Water demand factors per Zone 40 Water Supply Master Plan dated September 2016.

5 Water supply for Sheldon Park provided by on site wells



Appendix M

Technical Memorandum



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: Gyan Kalwani, Sheldon Business Park LTD.
Bryan Wilson, Sheldon Business Park LTD.

From: Tom Balbierz, PE

CC: Tim Denham, Wood Rodgers

Date: March 19, 2025

Subject: Summer Villas
Sewer Flow Assessment

Introduction

The purpose of this analysis is to confirm that proposed project sewer flows can be accommodated through a combination of existing and proposed sewer infrastructure.

The project site is located on the southeast corner of Waterman Road and Sheldon Road in the City of Elk Grove. The property encompasses approximately 111 acres and is bounded by Sheldon Road to the north, Waterman Road to the west, an existing rural residential lot to the east, and Laguna Creek and existing rural residential/industrial development to the south. Laguna Creek bisects the site north to south. Multiple existing overhead power lines also traverse the site north to south along Waterman Road. The site is proposed for development of a medium density residential retirement community occupying developable area both east and west of Laguna Creek.

Based on the SASD 2020 System Capacity Plan, the project site is located within the BR Bond Sheldon Trunk Shed. This shed encompasses the rural residential Sheldon area to which the subject project site is a part of. As described in System Capacity Plan, SacSewer (formerly SASD) was previously informed by the City of Elk Grove that this rural development area is not planned to be served by public sewers. Subsequently, existing backbone gravity sewer with sufficient depth and/or capacity to serve the project is not available in proximity to the site. Assumed flows from the project site are assumed to be 0 ESDs in the SASD 2020 System Capacity Plan.

Since gravity sewer service to the site is not feasible, public sewer service to the site can be managed by constructing an on-site sewer lift station and corresponding off-site sewer force main which discharges to an existing SacSewer gravity sewer network with sufficient residual capacity to support the project. We anticipate the subject lift station would be located in proximity to the northwest corner of the site. Based on modeling results from SacSewer staff (reference attached SacSewer Tech Memo), the closest viable force main discharge points are at MHs 280-179-1006 or 282-179-1014 located in Elk Grove-Florin Road approximately one mile west of the site. Approximately 6,500 linear feet of force main (4-6" diameter size estimated) would be required to be installed in Sheldon Road and Elk Grove-Florin Road to support the project. Modeling by SacSewer assumed an intake of about 0.68 mgd (based on an estimated 941 ESDs) at one of the two manholes listed above.

Sewer Flow Comparison

SacSewer uses Peak Wet Weather Flow (PWWF) to size gravity collection systems. The following equations are used by SacSewer to determine design flows:

- $PWWF \text{ (mgd)} = (ADWF * PF)$
- $ADWF \text{ (mgd)} = (310 \text{ gpd} / \text{ESD}) * (\# \text{ ESDs} / \text{acre}) * (\# \text{ of acres}) / 1,000,000$
- $PF = 3.5 - 1.8 * ADWF^{0.05}$ where ADWF is in mgd, and a minimum value of PF is 1.2
- $I/I \text{ (mgd)} = 1,600 \text{ gpd/acre} * (\# \text{ acres}) / 1,000,000$

Where

PWWF = Peak Wet Weather Flow

ADWF = Average Dry Weather Flow

PF = Peaking Factor

ESD = Equivalent Single Family Dwelling

I/I = Inflow and Infiltration

mgd = million gallons per day

gpd = gallons per day

As indicated in the equation above, ADWF is based upon ESD units and a design domestic flow factor of 310 gallons/day/ESD. The ADWF is calculated as the largest of the following methods: a) 6 ESDs per acre; b) The number of units for a project; or c) The most recent zoning, if the number of units is unknown.

Table 1 below presents a comparison between flows modeled by SacSewer for assessment of viable discharge locations for the project's proposed sewer force main and estimate flows associated with the current project as detailed by the Summer Villa SPA.

Table 1: Sewer Flow Comparison

Land Use	Development Area (acres) ¹	ESDs/Acre	Total ESDs based on ESD/acre factor	Total ESDs based on total project Lot Count	Total Sewer Flow (mgd)
SacSewer Modeled Flows ¹	156.8 ²	6	941	N/A	0.68
Proposed Summer Villas Project ³	111 ⁴	6	666	529 ⁵	0.54
Proposed Summer Villas Project ⁶	71.7 ⁷	10	717	529 ⁴	0.51

- 1 Preliminary SacSewer modeled flows as presented in the attached Tech Memo used for assessment of sewer force main discharge locations.
- 2 Preliminary project acreage assumed by SacSewer prior to development of Summer Villa SPA.
- 3 Estimated project sewer flows based on gross development area at 6 ESDs per acre.
- 4 Gross acreage of Summer Villas project based on June 2024 Summer Villas SPA resubmittal.
- 5 Total ESDs based on a maximum residential lot count of 499 units plus a 5 acre clubhouse site at 6ESD/acre.
- 6 Estimated project sewer flows based on net developable acreage at 10 ESDs per acre for medium density residential.
- 7 Net developable acreage of Summer Villas project based on June 2024 Summer Villas SPA resubmittal.

Conclusions

As indicated by Table 1, the sewer force main discharge points identified by SacSewer are expected to be more than adequate to serve the anticipated sewer flows from the project. The SacSewer estimated sewer flow of 0.68 mgd used for their modeling effort is in excess of that estimated for the project based on the latest Summer Villa SPA submittal (June 2024).

Attachments:

SacSewer Memo – Summer Villas Sewer Connection





Administrative Office
10060 Goethe Road
Sacramento, CA 95827
Tel 916.876.6000

EchoWater Facility
8521 Laguna Station Road
Elk Grove, CA 95758
Tel 916.875.9000

March 19, 2025

Tom Balbierz, PE, GE
Wood Rodgers, Inc.
3741 Douglas Road, Suite 150
Roseville, CA 95661

Subject: Summer Villas Sewer Connection - APN 127-0010-077

Dear Mr. Balbierz,

The Summer Villas project is located within the City of Elk Grove's Rural Residential area and is currently not intended to be served by public sewers. Because of this, SacSewer's 2020 System Capacity Plan BR Bond Sheldon Trunk Shed does not identify a plan for sewer connection and this area is accounted for at 0 ESDs/acre.

In November of 2022, SacSewer was asked to assess the potential of accepting sewer flows from the Summer Villas site (delivered from project site via sewer lift station and force main) based on a potential rezone to support a proposed age restricted active adult community concept. SacSewer proceeded to model the effects of connecting the Summer Villas development to public sewer. Below is a list of model assumptions used.

- 10-yr design storm
- Total acres: 156.78
- ESD density: 6 ESD/Ac
- Total ESDs: 940.70
- PWWF Flow (10-yr design flow): 0.6827 mgd

Based on the model results, SacSewer identified two potential force main discharge locations, both located at/near the Sheldon Road and Elk Grove Florin Road intersection approximately one mile west of the project site. Model results indicate the 12-inch trunk (MH 280-179-1006) in Elk Grove Florin Road at Sheldon Road will have enough capacity for the 0.6827mgd flow generated from the parcel under the 10-yr design storm. However, if the proposed flow is higher, or if the pump discharges at a higher rate, connection to the 15-inch mainline (MH 282-179-1014) in Elk Grove Florin Road approximately 700 feet to the north may be required. See Exhibit A.

SacSewer understands that a planning application in support of the Summer Villas Special Planning Area (SPA) was submitted to the City of Elk Grove (latest resubmittal June 2024). This SPA is proposed as an approximate 116 acre active adult residential community consisting of a maximum of 499 residences and a clubhouse. Assuming approval of SPA, if public sewer

www.sacs sewer.com

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connection is desired within the City of Elk Grove's Rural Residential area, please have the City send SacSewer the revised boundaries. If the revised boundaries exclude the subject parcel only, please submit a sewer study to proceed. If the revised boundaries include areas in addition to the subject parcel only, a new modeling analysis will need to be performed.

SacSewer does not guarantee sewer service or system capacity, either permanent or interim, to the property until the property obtains proper permits to connect to the system and pays all facility impact (capacity) fees.

If you have any questions regarding these comments, please call me at 916-876-6336 or email at lewis@sacsewer.com.

Sincerely,

Yadira Lewis

Yadira Lewis, P.E.
Development Services

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Exhibit A – Vicinity Map



Appendix N

Summer Villas Special Planning Area (SPA)

Transportation Analysis Report

Prepared for:
Raney

Submitted on:
September, 2025

SA23-0206

Table of Contents

1. Introduction.....	1
1.1. Purpose	1
1.2. Project Description	1
2. Analysis Methodology.....	4
2.1. Data Collection	4
2.2. Project Travel Characteristics	4
2.2.1. Trip Generation	4
2.2.2. Project Trip Distribution	5
2.3. Traffic Forecasting.....	7
2.3.1. Study Scenarios.....	7
2.3.2. VMT Forecasts	8
2.3.3. Roadway and Intersection Forecasts.....	8
2.3.4. Potential Limitations to Travel Demand Forecasts.....	8
2.4. VMT Analysis	11
2.4.1. Land Use Project Screening.....	11
2.4.2. VMT Performance Metrics.....	11
2.4.3. VMT Threshold Estimation	12
2.5. Intersection and Roadway Performance.....	14
2.6. Multimodal Analysis	16
2.6.1. Bicycle Level of Traffic Stress (LTS)	16
2.6.2. Pedestrian LTS	17
2.6.3. Transit Analysis	18
3. VMT Analysis.....	19
3.1. VMT Screening.....	19
3.2. VMT by General Plan Land Use Category	19
3.3. VMT by Study Area Limits.....	19
4. Intersection and Roadway Performance.....	21
4.1. Existing & Planned Transportation System.....	21
4.1.1. Regional Roadways.....	21
4.1.2. Local Roadways	21
4.1.3. Collision History	23
4.2. Traffic Operations	26
4.2.1. Intersection Operations.....	26
4.2.2. Roadway Operations	34

5. Bicycle/Pedestrian/Transit Facilities and Services.....	36
5.1. Existing & Planned Transportation System.....	36
5.1.1. Bicycle Facilities.....	36
5.1.2. Pedestrian Facilities.....	36
5.1.3. Transit Facilities.....	38
5.2. Multimodal Traffic Level of Stress.....	40
5.2.1. Bicycle Streetscore LTS.....	40
5.2.2. Pedestrian Streetscore LTS.....	40
6. Impacts and Mitigation Measures.....	42
6.1. Regulatory Background.....	42
6.1.1. SB 743.....	42
6.1.2. City of Elk Grove General Plan.....	42
6.1.3. City of Elk Grove Transportation Analysis Guidelines.....	42
6.1.4. City of Elk Grove Rural Road Improvement Policy and Standards.....	43
6.1.5. City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan.....	43
6.2. Thresholds of Significance.....	43
6.2.1. VMT.....	43
6.2.2. Bicycle Facilities.....	44
6.2.3. Pedestrian Facilities.....	44
6.2.4. Transit service and facilities.....	44
6.2.5. Transportation Hazards Related to Geometric Design Feature or Incompatible Uses	44
6.2.6. Emergency Access.....	45
6.3. Project Specific Impacts.....	45
6.3.1. Impact 1: VMT – Land Use Limits.....	45
6.3.2. Impact 2: VMT – Study Area Limits.....	45
6.3.3. Impact 3: Bicycle Facilities.....	47
6.3.4. Impact 4: Pedestrian Facilities.....	48
6.3.5. Impact 5: Transit Facilities and Services.....	48
6.3.6. Impact 6: Transportation Hazards Related to Geometric Design Feature or Incompatible Uses.....	49
6.3.7. Impact 7: Emergency Access.....	49
7. General Plan Consistency.....	51
8. Project Site review.....	49
Appendix A.....	49
Appendix B.....	50
Appendix C.....	108

List of Figures

Figure 1: Site Plan	3
Figure 2: Vehicle Trip Distribution.....	6
Figure 3: Bicycle Level of Traffic Stress (LTS)	17
Figure 4: Collision by Severity	25
Figure 5: Peak Hour Traffic Volumes and Lane Configurations– Existing Conditions	28
Figure 6: Peak Hour Traffic Volumes and Lane Configurations– Existing Plus Project Conditions.....	29
Figure 7: Peak Hour Traffic Volumes and Lane Configurations– Existing Plus Approved Project Conditions	30
Figure 8: Peak Hour Traffic Volumes and Lane Configurations– Existing Plus Approved Project Plus Project Conditions	31
Figure 9: Peak Hour Traffic Volumes and Lane Configurations– General Plan Buildout Conditions	32
Figure 10: Peak Hour Traffic Volumes and Lane Configurations– General Plan Buildout Plus Project Conditions	33
Figure 11: Local Roadways with Existing Bicycle and Pedestrian Facilities.....	37
Figure 12: Existing Transit Facilities.....	39
Figure 13: Elk Grove Rural Area.....	51

List of Tables

Table 1: Trip Generation	4
Table 2: City of Elk Grove Land Use Growth	7
Table 3: VMT Metrics.....	12
Table 4: Daily VMT Limit by Study Area.....	12
Table 5: Daily VMT Per Service Population by Residential Land Use Category	13
Table 6: Intersection Performance Targets.....	14
Table 7: Roadway Segment Performance Targets	15
Table 8: Bicycle Streetscore LTS.....	17
Table 9: Pedestrian Streetscore LTS	18
Table 10: VMT Performance by Land Use	19
Table 11: VMT Performance by Study Area	20
Table 12: Collision History Within ½ Mile of the Project.....	24
Table 13: Collision by Severity.....	24
Table 14: Intersection Operations – Existing and Existing Plus Project Conditions	27
Table 15: Daily Roadway Performance	35
Table 16: Bicycle Street Score LTS – Existing Conditions.....	40

Table 17: Pedestrian Street Score LTS – Existing Conditions	41
Table 18: Intersection Improvement Steps – Daily Volume Thresholds.....	52
Table 19: Improvement Recommendations	55
Table 20: Intersection Delay – With Recommended Improvements.....	56

1. Introduction

1.1. Purpose

The purpose of this report is to analyze the Transportation Impacts associated with the proposed Summer Villas Special Planning Area (SPA). This study analyzes the traffic conditions in the Project vicinity under existing conditions and under cumulative conditions, which represents General Plan Buildout. The transportation analysis addresses VMT, roadway performance, bicycle, pedestrian, and transit facilities and access.

This analysis is necessary because the Project requires a General Plan Amendment and Rezone from Rural Residential (RR) to active adult Low Density Residential (LDR), and a Development Agreement. This report includes existing conditions, regulatory background, analysis methodology and impacts and mitigation measures for Vehicle Miles of Travel (VMT), bicycle, pedestrian, transit, and emergency access.

1.2. Project Description

The Project site is located on the southeast corner of the Sheldon Road/Waterman Road intersection in the City of Elk Grove. The 116-acre Project area is divided into two residential development areas (the “West Neighborhood” and “East Neighborhood”) and two open space areas. The Project includes up to a maximum of 499 single-family active adult (55+) homes designed to allow residents to age in place and create a unique active adult community. In addition to the homes, the community will include a private clubhouse/recreation center, small private park space, and significant open space areas, providing residents access to abundant outdoor recreation opportunities. The two neighborhoods are bisected by a central open space area associated with Laguna Creek (“Laguna Creek Open Space”) and is buffered from Waterman Road by a westerly open space area (“Waterman Recreational Open Space”).

The Project plan consists of the following land uses:

West Neighborhood 150 Single Family homes (31.4 Acres)

East Neighborhood 349 Single Family homes (40.3 Acres)

The Project requires a General Plan Amendment and Rezone from Rural Residential to active adult Low Density Residential. Access to the Project site would include two gated entries at each neighborhood, with one along Waterman Road and three entrances along Sheldon Road. **Figure 1** shows the Project area and general location of the proposed access locations to Sheldon Road and Waterman Road. Chapter 8 includes site access and on-site circulation recommendations that are shown on **Figure 14** (Chapter 8). General recommendations are summarized below:

Sheldon Road

- 1st Access West of Waterman Road** – Realign access to match existing driveway on the north side of Sheldon Road or eliminate access and add an additional access on Waterman Road.

2nd Access West of Waterman Road – Realign access to match planned access on the north side of Sheldon Road.

Sheldon Road – Add center two-way left-turn lane, serving the second and third access west of Waterman Road.

Waterman Road

New Access – Add a new access, replacing first driveway on Sheldon Road west of Waterman Road, if the Sheldon Road driveway is eliminated.

Realign Access – Realign the proposed access on Waterman Road to align with the Crowell Drive intersection.

On-site

Full Access Bridge – Design the planned bridge, connecting the east and west sides of the project to accommodate autos, bikes, and pedestrians.

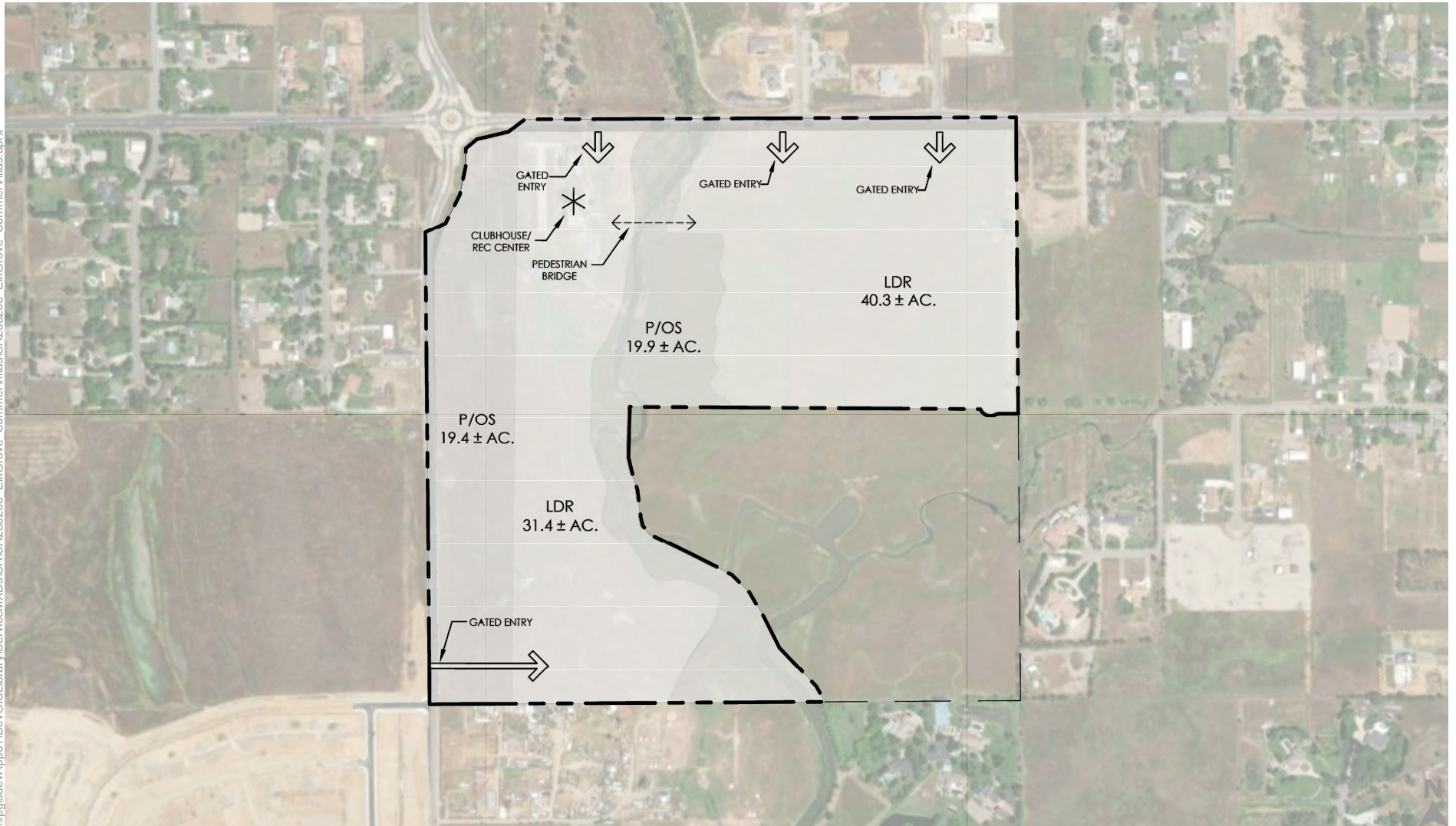


Figure 1



2. Analysis Methodology

This chapter presents the methods used for the analysis of the proposed Project. The methods describe existing conditions data collection, Project travel characteristics, travel demand modeling, VMT analysis, roadway and intersection performance, the analysis of bicycle and facilities, and safety. The procedures outlined below are consistent with the *City of Elk Grove Transportation Guidelines, December 2023*.

2.1. Data Collection

Daily roadway segment counts collected the on Wednesday November 08 and Thursday November 09, 2023. Turning movement traffic counts were collected at the existing study intersections on Tuesday August 20, 2024, during the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods. Local schools were in session with in-person instruction and typical traffic conditions were observed. The existing conditions data is used for the roadway performance analysis.

2.2. Project Travel Characteristics

Project travel characteristics, including trip generation and trip distribution are discussed below. These travel characteristics were used for the roadway performance conducted under existing conditions.

2.2.1. Trip Generation

The proposed Project’s trip generation was estimated using the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021), which is the most recent version of the manual. Trip generation for the Project was estimated using the rates for senior-adult housing type (single family). The Project trip generation summarized in **Table 1** was used for the analysis of roadway and intersection performance under Plus Project conditions.

Table 1: Trip Generation

Land Use	Quantity (Dwelling Units)	Time	Trip Rate	% In	% Out	Total Trips	Ins	Outs
Senior Adult Housing – Single- Family (ITE Code 251)	499	Daily	4.31	50%	50%	2,151	1075	1076
		AM Peak Hour	0.24	33%	67%	120	40	80
		PM Peak Hour	0.30	61%	39%	150	91	59

Note:

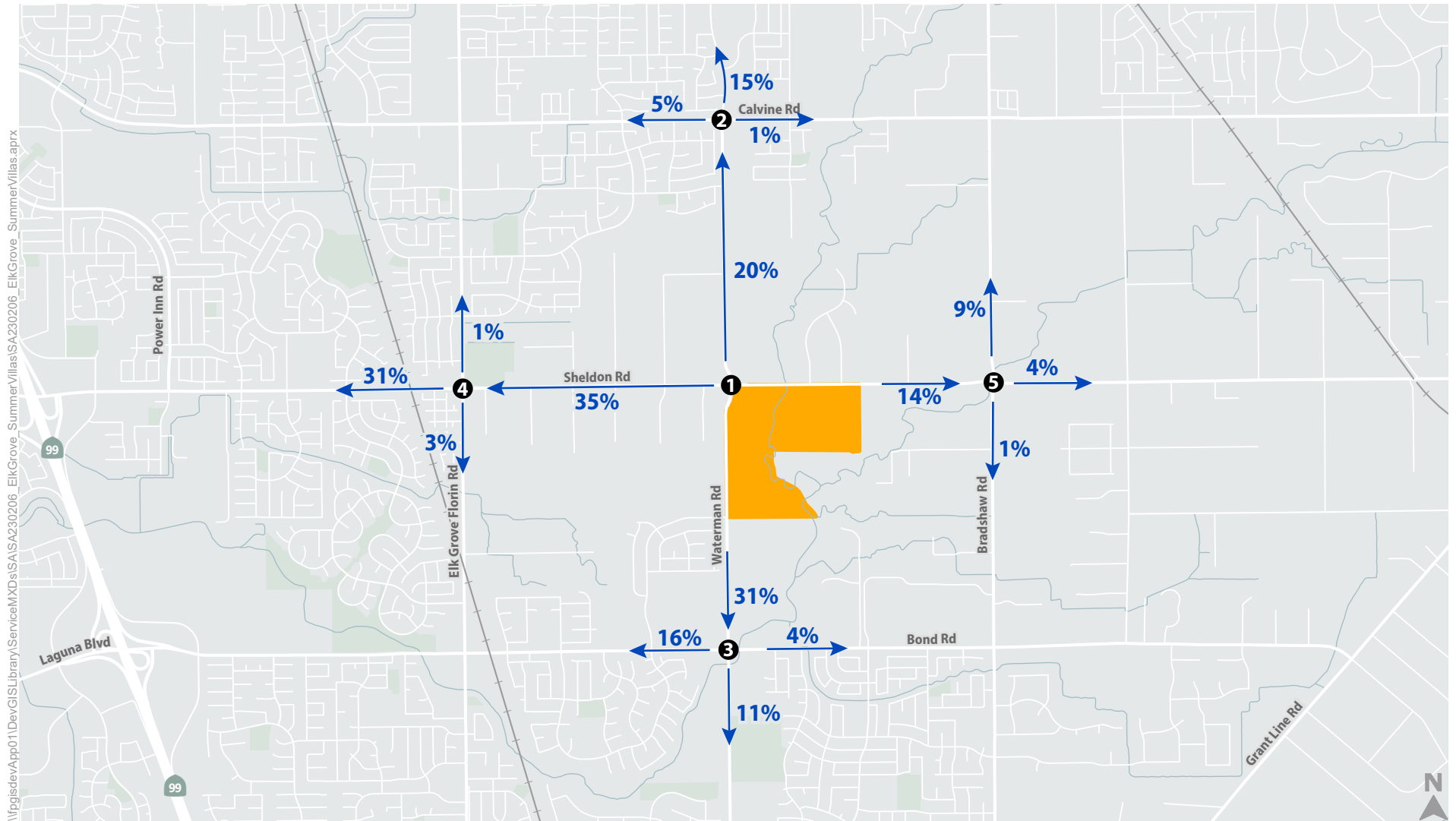
1 – All rates derived from the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021).

2 – Average trip rate applied.

Source: Fehr & Peers, 2025

2.2.2. Project Trip Distribution

The distribution of Project trips was developed using a modified version of the City of Elk Grove Activity-based travel demand model EGSIM20. EGSIM20 is the latest ABM developed by modifying the regional Sacramento Area Council of Governments (SACOG) known as SACSIM19. The Project's trip distribution is shown in **Figure 2**. The trip distribution shows that most of the traffic generated by the Project is expected to travel west using Sheldon Road (31%), Bond Road (16%), and Calvine Road (5%). Only about 4% of the traffic is expected to travel east using Sheldon Road. The rest is expected to be distributed on Waterman Road (14% north, 11% south) and Bradshaw Road (9% north, 1% south). The Project's trip distribution was used to calculate the total Project generated trips on the study roadways and intersections.



XX% → Trip Distribution

Project Boundary

Figure 2

Vehicle Trip Distribution

2.3. Traffic Forecasting

A modified version of the City of Elk Grove travel demand model EGSIM20 was used for forecasting the study scenarios. The following two model scenarios were used for forecasting.

Base Year Model – 2019/2020 Pre-Pandemic Conditions
Future Year Model – General Plan Buildout Model (Beyond 2040)

Table 2 compares total residential units and jobs under Base Year (2020) and General Plan Buildout conditions.

Table 2: City of Elk Grove Land Use Growth

Model Scenario	Residential Units	Jobs
Base Year (2020)	54,791	45,840
General Plan Buildout	103,460	94,897

Source: Fehr & Peers, 2025

For intersection and roadway analysis, the Project's trip generation and trip distribution were used to estimate Plus Project scenarios. For VMT analysis, EGSIM20 was modified by replacing the General Plan land use assumptions (in the Project area) with the proposed Project's land use.

2.3.1. Study Scenarios

The study analyzes traffic conditions for the following scenarios:

Existing Conditions (ENP)
Existing Plus Project Conditions (E+P)
Existing Plus Approved Projects Conditions (E+AP)
Existing Plus Approved Projects Plus Project Conditions (E+AP+P)
General Plan Buildout Conditions (CNP)
General Plan Buildout Plus Project Conditions (C+P)

In addition to existing conditions and general plan Buildout conditions, the analysis included existing plus approved Project conditions, as the Silverado Village Special Planning Area (SPA) is within the vicinity of the Project site. Throughout this document, the Silverado Village SPA will be referred to as the "approved Project". Forecasts for the E+AP and E+AP+P scenarios included adding the approved Project's trip generation from the Transportation Impact Study for Silverado Village SPA¹ to the existing traffic volumes.

¹ Draft Transportation Impact Study for Silverado Village SPA, April 2013
https://www.elkgrovecity.org/sites/default/files/city-files/Departments/Planning/Regulations/SilveradoVillageSPA_2014-08-27.pdf

2.3.2. VMT Forecasts

The estimation of the Project's VMT performance follows the methods documented in *EGSIM20 – Model Development Report and VMT Methodology* (October 5, 2022), which is included in **Attachment A**.

2.3.3. Roadway and Intersection Forecasts

This study applies a forecasting procedure known as the "difference method" to develop all future scenario forecasts. The difference method takes the base year model's raw estimates and the future year model's raw forecasts and adds the difference to existing traffic volumes to develop future year forecasts. This method corrects any potential anomalies within the model. The following formula illustrates this forecasting procedure:

$$\text{Forecast Scenario} = \text{Existing Traffic Count} + (\text{Forecast Scenario Raw Model Volume} - \text{Base Year Raw Model Volume})$$

The analysis applies this method to develop intersection turning movement traffic forecasts during the AM and PM peak hours, and daily roadway volume forecasts.

2.3.4. Potential Limitations to Travel Demand Forecasts

Travel behavior and transportation systems are changing quickly in response to emerging trends, new technologies, and different user preferences. Some of the new travel options and technologies emerging in the SACOG region are discussed below.

2.3.4.1. Commuter trends

According to "An American Community Survey Briefs" (February 2024), the pandemic has resulted in more people working from home (5.7% in 2019 to 15.2% in 2022) and a reduction in commuters using public transportation (5.0% in 2019 to 3.1% in 2022). These trends apply to the more than 12,000 State workers who live in Elk Grove (Sac Bee, 2017), as ridership on Sacramento Regional Transit Commuter Routes between Elk Grove and Downtown Sacramento have decreased.

2.3.4.2. Substitution of internet shopping and home delivery for some shopping or meal-related travel

The 2018 SACOG Household Travel Survey (SHTS) showed that adults reported receiving a home delivery of a package on 17 percent of the travel days in the survey—and additional 4 percent received packages at work, food deliveries at home, etc. How these percentages compared to earlier years is not known.

From 2019 (pre-pandemic) to 2023, Cyber Monday sales revenue increased at an average annual rate of 8% (Capital One Shopping Research 2024).

National Household Travel Survey (NHTS) showed the number of online purchases with home delivery doubling between 2009 and 2017, from about 2.5 to 4.9 per household per month (FHWA 2018).

Comparisons of 2017 to 2009 NHTS data show that nationally, non-work trips per household declined by 11 percent. Most of that decline is attributed to lower rates of shopping trips and other family-related errands (FHWA 2018).

2.3.4.3. New travel modes and choices

Transportation Network Companies (TNCs), car share, bike share, scooter share, and on-demand micro transit have increased the travel options available to travelers in the SACOG region and have contributed to changes in traditional travel demand relationships. The current share of resident trips served by TNCs (e.g., Uber, Lyft) is less than one-quarter percent, based on the 2018 SACOG Household Travel Survey (SHTS), and future growth depends on TNCs developing a sustainable business model.

However, the use of privately owned vehicles is still the mode of choice for the great majority of Californians. According to Caltrans², VMT Statewide increased by approximately 15% between 2001 and 2019 despite the state's efforts.

2.3.4.4. Automation of vehicles

Both passenger vehicles and commercial vehicles and trucks are evolving to include more automation. Research, development, and deployment testing is proceeding on fully Autonomous Vehicles (AV), for which no human driver would be required, and the vehicle itself can navigate the roadways to take people or goods where they need to go. Forecasts of how quickly research, development, and deployment testing will transition to full deployment and marketing of fully AV vary widely both on the pace of the transition, and the market acceptance of fully autonomous operation. More uncertainty exists for the behavioral response to AVs. In terms of impact on the transportation system and the environment, a scenario of concern would be one in which AVs are privately owned, like most are at present, but the automated function of the vehicles would entice users to travel more. Examples of this phenomenon could include:

- Vehicles are repositioned to serve different members of a household (e.g., have a car drop a worker at their workplace, then drive back home empty to serve another trip, such as a student going to school). This could add significantly to traffic volumes and VMT.
- The time spent in a vehicle is reevaluated by travelers, resulting in an increase in the willingness to make longer trips.
- There may be an increasing willingness to drive more to avoid parking costs or tolls.

2.3.4.5. Uncertainties in Modeling

Few, if any models, explicitly capture the above-mentioned new modes of travel and emerging trends in travel behavior. Significant uncertainties exist at the present time that prevent explicit modeling of these new modes and emerging trends.

Transportation and mobility are being transformed through several forces ranging from new technologies, different personal preferences, and the unique effects caused by the COVID-19 pandemic, the combination of which could alter traditional travel demand relationships in the near- and long-term future.

The COVID-19 pandemic and subsequent actions by federal, state, and local governments to curtail mobility and encourage physical distancing (i.e., limit in-person economic and social interactions) profoundly changed travel conditions. While travel activity will likely return to some form of normality

² Caltrans, California VMT Data, dot.ca.gov/programs/esta/sb-743/ca-vmt

after government shelter-in-place orders are lifted and the pandemic has concluded, it is likely that some of these temporary changes will influence people's travel choices into the future, including either accelerating or diminishing some of the emerging trends in transportation that were already underway prior to the pandemic.

The traffic counts collected for the transportation analysis pre-date any response to the pandemic. In addition, the travel demand forecasts developed for the transportation analysis of the proposed Project do not account for the potential short-term or long-term behavioral changes that may be instituted to reduce the general public's exposure level to this or other viruses moving forward. Although such measures (e.g., shifting to more telecommuting and virtual meetings) would tend to result in fewer average daily trips for most land uses, the degree that the changes would be implemented and their resilience over time is not known and cannot be predicted with a high degree of confidence. Therefore, they are not reflected in the forecasts.

2.4. VMT Analysis

As outlined above, the estimation of the Project's VMT performance follows the methods documented in *EGSIM20 – Model Development Report and VMT Methodology* (October 5, 2022), which is included in **Attachment A**.

2.4.1. Land Use Project Screening

The City has established specific limits on VMT allowable for each land use Project by General Plan land use designation as well as Citywide limits and limits within each Study Area. Land use Projects must show consistency with the General Plan Land Use Plan. Projects that are inconsistent with the Land Use Plan are automatically considered inconsistent with the VMT policy and shall conduct a VMT analysis. Projects that are consistent with the Land Use Plan move to the next step.

Projects that are not likely to lead to a substantial or measurable increase in VMT and are presumed to be less than significant include, but are not limited to, the following:

- Projects consistent with the General Plan and Zoning and located within low VMT generating areas as determined by the Development Services Director.

- Projects consistent with the General Plan and Zoning and which qualify for a categorical or statutory exemption under CEQA.

- Projects consistent with the General Plan and Zoning and which were covered under a prior CEQA analysis, and where none of the conditions provided in CEQA Guidelines Section 15162 would trigger additional or new analysis.

The Project description and location were assessed to determine if the Project can be screened from VMT analysis.

2.4.2. VMT Performance Metrics

Consistent with CEQA Guidelines, § 15064.7, the City selected VMT per service population as the preferred performance metric, for implementing its VMT policy. Of the performance metrics considered, VMT per service population was the most intuitive to the decision makers and supported implementation of the General Plan by incentivizing development in the City's core and not in sensitive resource areas that the community values. A key emphasis of the General Plan was to plan and develop a better job-to-housing balance so residents can work where they live, and to support more mixed-use development to reduce the need to travel by car for goods and services. The VMT per service population metric is useful since it captures these trip-reduction benefits and accounts for travel from the full range of users and not just residents or just workers.

In addition, the City of Elk Grove uses VMT performance targets by General Plan land use category and VMT limits for the City and study areas, which is an additional step to ensure consistency with the General Plan. Active Adult units on average generate less trips than traditional single-family homes. This was accounted for by adjusting the age of household population in the population synthesis portion of the SACSIM activity-based model (refer to Attachment A for details). In addition, an off-model adjustment was done by comparing the model trip rates for active-adult households with ITE trip rates for the same household type. The Project's total daily VMT were evaluated against

the underlying General Plan Land Use Designation limit of VMT per service population and Citywide (or Study Area) limit of total daily VMT (**Table 3**).

Table 3: VMT Metrics

Data Set	Description	Purpose
Total Daily VMT	Sum of all daily vehicle miles traveled produced by all uses within the City or applicable Study Area.	Assessing a Project against Citywide or Study Area total limits.
VMT per Service Population	Sum of all vehicle miles traveled produced by uses in the applicable land use designation, divided by the sum of total employees working within the assessed area and dwelling units in the assessed area.	Assessing a Project against land use designation limits.

Fehr & Peers, 2025

2.4.3. VMT Threshold Estimation

The EGSIM20 Travel Demand Model is a tool for implementing the General Plan (i.e., like General Plan policy and actions), like Policy MOB-1-1.

With the development of EGSIM20 and associated calibration and revalidation, the VMT performance measures were re-estimated (compared to the 2019 General Plan thresholds). **Tables 4 and 5** summarize the relevant, current VMT limits at General Plan Buildout (i.e., for the City limits) and VMT by General Plan land use category, respectively, using the VMT calculation methodology outlined in **Attachment A**.

Table 4: Daily VMT Limit by Study Area

City Limit and Study Areas	VMT Limit for Daily Total VMT Generated by the City of Elk Grove Limits
City	8,066,247
North Study Area	27,383
East Study Area	584,786
South Study Area	1,594,674
West Study Area	773,103

Source: Fehr & Peers, 2025

VMT limit is – 85% of average base year VMT per service population by land use

Table 5: Daily VMT Per Service Population by Residential Land Use Category

Land Use Designation	VMT Per Service Population	
	Base Year (2020)	VMT Limit ¹
Commercial and Employment		
Community Commercial (CC)	31.4	26.7
Regional Commercial (RC)	31.7	26.9
Employment Center (EC)	23.8	20.2
Light Industrial/Flex (LI/FX)		15.5
Light Industrial (LI)	26.4	22.4
Heavy Industrial (HI)	31.2	26.5
Mixed Use		
Village Center Mixed Use (VCMU)	–	19.4
Residential Mixed Use (RMU)	–	20.6
Transect		
General Neighborhood Residential (T3–R)	–	20.7
Neighborhood Center Low (T3)	–	21.1
Neighborhood Center Medium (T4)	–	20.2
Neighborhood Center High (T5)	–	15.7
Public/Quasi Public and Open Space		
Parks and Open Space(P/OS)	–	NA ²
Resource Management and Conservations (RMC)	–	NA ²
Public Services (PS)	–	NA ²
Residential		
Rural Residential (RR)	29.6	25.2
Estate Residential (ER)	24.2	20.6
Low Density Residential (LDR)	22.7	19.3
Medium Density Residential (MDR)	21.0	17.9
High Density Residential (HDR)	20.8	17.7
Other		
Agriculture (AG)	–	NA ²

Notes

1 – VMT Limit is 85% of the average base year VMT per service population for parcels with land use designation or VMT per service population at Buildout for land use designation that do not exist in the base year.

2 – These land use designations are not anticipated to produce substantial VMT, as they have no residents and few to not employees.

Source: Fehr & Peers, 2025

2.5. Intersection and Roadway Performance

This study analyzes intersection operating conditions using delay as the primary measure of operational performance, using procedures and methodologies contained in the Highway Capacity Manual, 6th Edition (Transportation Research Board, 2017) as implemented with the Synchro software for the signalized intersections and AASIDRA software for roundabouts. The HCM methodology determines delay at signalized and all-way stop controlled intersections based on the weighted average control delay per vehicle at the intersection. At side-street stop-controlled intersections, the delay is calculated for each movement.

Study roadways were analyzed by comparing daily (two-way total) roadway segment volumes to establish design targets identified in Table 9 of the *City of Elk Grove Transportation Guidelines, July 2023*.

Table 6 and Table 7 summarize the intersection and roadway performance targets, respectively. A Project may be inconsistent with the General Plan if it causes an intersection to operate in excess of the performance target for that intersection type; however, the City may allow deviations from these metrics when accounting for both roadway operations and the effectiveness of the improvements with the character of the surrounding area, the cost to complete the improvement, and ongoing maintenance obligations (General Plan policy MOB-1-3).

Table 6: Intersection Performance Targets

Intersection Control	Delay (Seconds)
Stop (Side-Street & All-Way)	< 35.1
Signal	< 55.1
Roundabout	< 35.1

Source: *Highway Capacity Manual 2016*, Transportation Research Board, 2016.

Table 7: Roadway Segment Performance Targets

Facility Type	Number of Lanes	Median	Speed (mph)	Average Daily Traffic Design Target (No of Vehicles)
Collector/Arterial	2	No	25	13,600
			30	14,600
			35	15,700
			40	16,600
			45	17,700
			55	18,600
		Yes	25	14,300
			30	15,600
			35	16,500
			40	17,500
			45	18,600
			55	19,600
	4	No	30	29,800
			35	31,600
			40	33,500
			45	35,300
	4	Yes	30	31,400
			35	33,300
			40	35,300
			45	37,200
	5	Yes	45	45,600
	6	Yes	30	46,400
			35	48,900
			40	51,500
			45	54,000
	8	Yes	45	64,800
			55	72,000
Expressway	4	Yes	55	64,800
	6	Yes	55	97,200
Freeway	4	Yes	55+	74,400
	6	Yes	55+	111,600
	8	Yes	55+	148,800

Source: City of Elk Grove Transportation Analysis Guidelines (Adopted February 2019/Updated December 2019)

2.6. Multimodal Analysis

The analysis methods evaluate the Project's potential adverse effects on transportation facilities and services related to bicycles, pedestrians, and transit. Existing and planned facilities near the Project area were identified to determine if the Project could disrupt current facilities and services or interfere with the implementation of planned ones. The analysis methods used to analyze bicycle, pedestrian, and transit facilities are discussed below.

2.6.1. Bicycle Level of Traffic Stress (LTS)

Bicycle LTS refers to the comfort associated with roadways, or the mental ease people experience riding on them. Metrics for bicycling LTS were developed at the Mineta Transportation Institute (MTI) and published in the report "Low-Stress Bicycling and Network Connectivity."³ The criteria establish a "weakest link" approach, as roadways are classified based on their segments with the highest level of traffic stress, assuming that only those that are comfortable riding under the higher stress would travel on that road. Factors influencing LTS include:

- Number of travel lanes
- Speed of traffic
- Number of vehicles
- Presence of bike lanes
- Width of bike lanes
- Presence of physical barrier

Bicycle riders vary in experience, skill, ability, and confidence. As such, they rely on the bikeway system to cater to their specific needs and abilities. Some cyclists are more comfortable riding in traffic and value bikeways and routes that are direct and limit unnecessary delays. They more comfortably utilize facilities that share the roadway with automobiles or have limited bicycle infrastructure. People with limited bicycling confidence and lower or developing skill levels such as children and older adult riders may desire more separation from traffic to feel comfortable enough to ride. Different bicycle types also require more space in bicycle facilities, such as trailers for children or cargo or adult tricycles. For these reasons, facilities should be designed to accommodate the lowest skill levels, especially in heavily traveled areas.

Recent research has correlated these different bicycle riders with the level of "traffic stress" they are willing to experience while cycling. Bicycle LTS criteria span from 1 to 4, with 1 being the least stressful and 4 being the most stressful. **Table 8** summarizes Pedestrian Streetscore LTS. **Figure 3** shows the different LTS riders in a graphical format.

Fehr & Peers Streetscore+ tool was used to analyze the level of traffic stress for bicyclists.

³ Mekuria, Maaza C., Peter G. Furth, and Hilary Nixon, (2012). *Low-Stress Bicycling and Network Connectivity*. San Jose, California: Mineta Transportation Institute.

Table 8: Bicycle Streetscore LTS

Streetscore LTS	Description
1	Most children and elderly riders can tolerate this level of stress and feel safe and comfortable. LTS 1 roadways typically require more separation from traffic.
2	This is the highest level of stress that the mainstream adult population will tolerate while still feeling safe.
3	Bicyclists who are considered “enthused and confident” but still prefer having their own dedicated space for riding will tolerate this level of stress and feel safe while bicycling.
4	For bicyclists, this is tolerated only by those characterized as “strong and fearless,” which comprises a small percentage of the population. These roadways have high speed limits, multiple travel lanes, limited or non-existent bike lanes and signage, and large distances to cross at intersections.

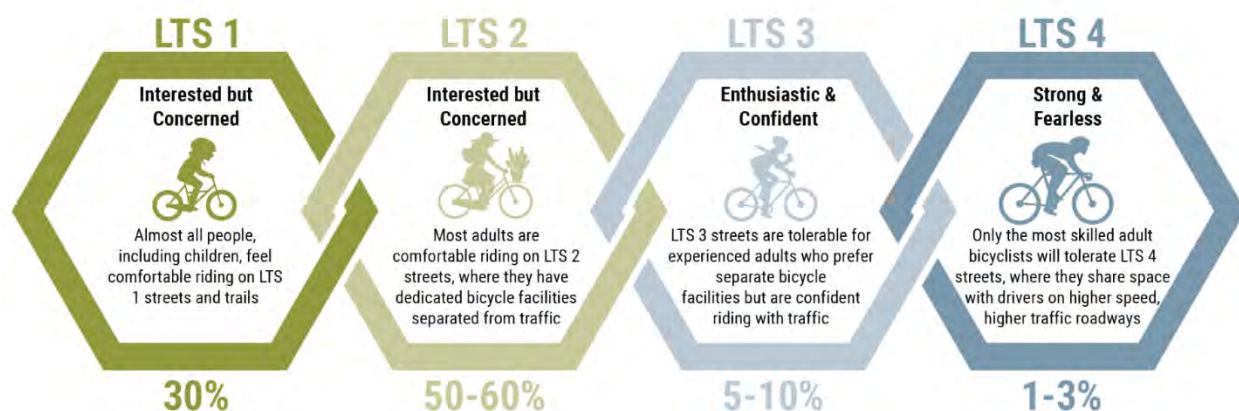


Figure 3: Bicycle Level of Traffic Stress (LTS)

2.6.2. Pedestrian LTS

The Pedestrian LTS refers to the pedestrian comfort associated with a roadway or intersection. The Pedestrian LTS methodology builds on Mekuria, Furth, and Nixon’s 2012 *Low Stress Bicycling and Network Connectivity* report and LTS methodology with a corresponding index for pedestrian comfort. A tool to evaluate Pedestrian and Bicycle LTS called Streetscore+ was developed by Fehr & Peers and includes recommended parameters for the pedestrian environment provided by the NACTO Urban Streets Design Guide (USDG) and additional considerations of comfort informed by practitioner and best practice experience. Roadway segments and intersection approaches receive individual scores based on different considerations. The following factors are considered in developing the Pedestrian Streetscore+ for roadways and intersections:

<u>Roadways</u>	<u>Intersections</u>
Usable sidewalk space	Crossing distance
Driveways	Accessibility
Pedestrian-scale lighting	Channelized right-turns
Street trees and landscaping	Leading pedestrian intervals (LPIs) and pedestrian scrambles
Speed	
Sidewalk quality	
Number of travel lanes	
Heavy vehicle volumes	
Crosswalk frequency	

The Pedestrian Streetscore LTS uses a scale that ranges from 1 to 4, with 1 being the least stressful and 4. **Table 9** summarizes Pedestrian Streetscore LTS.

Table 9: Pedestrian Streetscore LTS

Streetscore LTS	Description
1	Highly comfortable, pedestrian-friendly, and easily navigable for pedestrians of all ages and abilities, including seniors or school-aged children walking unaccompanied to school. These streets provide an ideal “pedestrian-friendly” environment.
2	Generally comfortable for many pedestrians, but parents may not feel comfortable with children walking alone. Seniors may have concerns about the walking environment and take more caution. These streets may be part of a “pedestrian-friendly” environment where it intersects with a more auto-oriented roadway or other environmental constraints.
3	Walking is uncomfortable but possible. Minimum sidewalk and crossing facilities may be present, but barriers are also present that make the walking experience uninviting and uncomfortable.
4	Walking is a barrier and is very uncomfortable or even impossible. Streets have limited or no accommodation for pedestrians and are inhospitable and possibly unsafe environment for pedestrians

Fehr & Peers Streetscore+ tool was used to analyze the level of traffic stress for bicyclists.

2.6.3. Transit Analysis

This analysis focused on evaluation of the Project’s potential adverse effects on transportation facilities and services related to transit facilities. The evaluation could include identification of any disruption to existing facilities and services or interference with the implementation of planned facilities and services or create demand for public transit service above the crush load capacity that is provided or planned.

3. VMT Analysis

This chapter presents analysis of Project vehicle miles traveled (VMT), relative to the current VMT limits and VMT by General Plan land use category presented in **Tables 4 and 5** above.

3.1. VMT Screening

The proposed Project does not qualify for VMT screening due to the Project size, location, and inconsistency with the General Plan land uses (i.e., type and intensity). The Project therefore triggers a need for VMT analysis.

3.2. VMT by General Plan Land Use Category

Project's VMT per service population was estimated by adding the Project to the cumulative GP Buildout scenario using the methodology described in the previous section. **Table 10** summarizes the Projects VMT per service population for proposed land use. The Project exceeds the VMT limit due to its location and lack of proximity to destinations.

Table 10: VMT Performance by Land Use

Land Use Designation	VMT per Service Population for Low Density Residential
VMT Limit	19.3
Summer Villas Project	20.7
Comparison	+7.3%

Notes:

Calculated Using EGSIM20

VMT limit is – 85% of average base year VMT per service population by land use

Source: Fehr & Peers, 2025

3.3. VMT by Study Area Limits

In addition, the City of Elk Grove uses VMT performance targets by General Plan land use category and VMT limits for the City and study areas, which is an additional step to ensure consistency with the General Plan. **Table 11** summarizes the total daily VMT generated by the City Limits with and without the proposed Project.

Table 11: VMT Performance by Study Area

Land Use Designation	Daily Total VMT Generated by the City of Elk Grove Limits
VMT Limit	8,066,247
VMT with Summer Villas Project	8,071,967
Comparison	+0.07%

Notes:

Calculated Using EGSIM20

VMT limit is – Total Daily VMT generated by City of Elk Grove Boundary as per the most recent version of the General Plan Land Use designations from October 2023

Source: Fehr & Peers, 2025

4. Intersection and Roadway Performance

This chapter presents analysis of intersection and roadway performance under existing and General Plan Buildout conditions, relative to the performance standards in **Tables 8 and 9** presented in Chapter 2.

4.1. Existing & Planned Transportation System

4.1.1. Regional Roadways

State Route 99 (SR-99) is a major interstate freeway corridor that connects major cities within Sacramento County and beyond. The closest interchange to the Project site is the Sheldon Road interchange, which is approximately 2.5 miles to the west.

4.1.2. Local Roadways

Key local study area roadways area is listed below. The functional classifications (e.g., arterial, collector, etc.) of listed local roadways represent designations identified in the Elk Grove General Plan. The number of lanes and posted speed limits of these roadways were obtained from Google Street view and their average daily traffic (ADT) volume were from the City of Elk Grove GIS open data portal showing traffic volumes⁴ or from City of Sacramento traffic count repository.

Sheldon Road is an east–west roadway that extends from Grant Line Road at the eastern part of City of Elk Grove to Bruceville Road to the west. The Project proposes three access locations along Sheldon Road between Waterman Road and Valerie Way. However, the project access review in Chapter 8 recommends that the westernmost access on Sheldon Road should be relocated to Waterman Road, about 600 feet south of Sheldon Road. The intersection of Sheldon Road/Waterman Road has recently been improved to a roundabout with at grade bicycle and pedestrian crossings. Sheldon Road is subject to the Elk Grove Rural Road Improvement Policy.

Lane Configuration: Sheldon Road is a four-lane arterial between Bruceville Road and Jocelyn Way/Luis Stein Road to six lanes between Jocelyn Way/Luis Stein Road and Power Inn Road. The road then goes down to four lanes until Elk Grove Florin Road and finally continues as two-lane roadway up to Grant Line Road.

ADT Volume: ADT on Sheldon Road between Waterman Road and Bradshaw Road is 11,100, between Elk Grove Florin Road and Waterman Road is 13,800 and between Lewis Stein Road and SR 99 is 31,350.

Speed Limit: The posted speed limit is 40 mph on Sheldon Road near the Project site. This posted speed limit continues beyond the Project site both east and west.

Waterman Road is a north–south roadway that extends north of Vintage Park Drive in the Sacramento County to Grant Line Road in the City of Elk Grove. The Project proposes one

⁴ City of Elk Grove GIS open data portal, as of 05/06/25
<https://elkmap.maps.arcgis.com/apps/webappviewer/index.html?id=c2f492ab24e94a17820c163753b48e69>

access along Waterman Road between Sheldon Road and Crowell Drive. However, the project access review in Chapter 8 recommends that the westernmost access on Sheldon Road should be relocated to Waterman Road, 600 feet south of Sheldon Road. The segment of Waterman Road located half mile north and south of Sheldon Road are subject to the Elk Grove Rural Road Improvement Policy.

Lane Configuration: Waterman Road is generally a two-lane arterial throughout its length.

ADT Volume: ADT on Waterman Road between Calvine Road and Sheldon Road is 11,100, between Sheldon Road and Bond road is 12,470 and south of Bond road is 10,300.

Speed Limit: The posted speed limit on Waterman Road is 45 mph.

Bradshaw Road is a north-south arterial less than half a mile east of the Project, extending from Folsom Boulevard in Sacramento County to Grant Line Road in Elk Grove.

Lane Configuration: Bradshaw Road is generally a two-lane roadway.

ADT Volume: ADT on Bradshaw Road between Calvine Road and Sheldon Road is 19,500, between Sheldon Road and Bond road is 16,100, and south of Bond road is 12,400.

Speed Limit: The posted speed limit on Bradshaw Road is 45 mph.

Elk Grove Florin Road is a north-south arterial extending from Florin Road in Sacramento County to East Stockton Boulevard in Elk Grove. North of Florin Road, Elk Grove Florin continues as South Watt Avenue and provides regional connection to the City of Sacramento.

Lane Configuration: Elk Grove Florin Road is generally a four-lane roadway between Florin Road and Gerber Road. South of Gerber, it varies between five and then six lanes until Sheldon Road. South of Sheldon, it continues as four lanes up to Bond Road and then finally continues as two lanes,

ADT Volume: ADT on Elk Grove Florin Road between Calvine Road and Sheldon Road is 26,700, between Sheldon Road and Bond road is 22,800, and South of Bond road is 20,700.

Speed Limit: The posted speed limit on Elk Grove Florin Road is 45 mph.

Calvine Road is an east-west major arterial extending from SR 99 to Grant Line Road and forms the City's northern edge. West of SR99, Calvine road continues as Consumnes River Boulevard and connects to Interstate 5. Calvine Road is at the border of the City. The Project is located one mile south of the road.

Lane Configuration: Calvine Road is six lanes from Power Inn Road to Cliffcrest Drive, transitions to four lanes from Cliffcrest Drive to Vintage Park Drive, and then to five lanes between Vintage Park Drive and Elk Grove-Florin Road.

ADT Volume: ADT on Calvine Road between Waterman Road and Bradshaw Road is 19,000 and between Elk Grove Florin and Waterman is 29,520 (August and September 2019).

Speed Limit: The posted speed limit of Calvine Road is 45 mph.

Bond Road is an east-west roadway that extends from SR 99 to Grant Line Road. West of SR 99, Bond Road continues as Laguna Boulevard and connects to Interstate 5. The Project is located half a mile north of the Road.

Lane Configuration: Bond Road is four lanes between E. Stockton Boulevard to Bradshaw Road. East of Bradshaw Road, Bond Road is two lanes. Bond Road east of Bradshaw Road is subject to the Elk Grove Rural Road Improvement Policy.

ADT Volume: ADT on Bond Road between E Stockton Boulevard and Elk Grove Florin Road is 28,500 between Elk Grove Florin Road and Waterman road is 20,800, between Waterman Road and Bradshaw Road is 17,300 and east of Waterman road is 8,700.

Speed Limit: The posted speed limit on the roadway west of Bradshaw is 45 mph and 40 mph east of Bradshaw.

4.1.3. Collision History

This section analyzes collision data from January 1, 2020 to December 31, 2024, obtained from Transportation Injury Mapping System (TIMS) developed by Safe Transportation Research and Education Center, UC Berkeley⁵ (2023 – 2024 is provisional and subject to change). Data used in TIMS is from California Statewide Integrated Traffic Records System (SWITRS). **Figure 4** illustrates collisions by severity and calls out all bike and pedestrian collisions that resulted in fatalities.

For the analysis, collisions within approximately 1 mile of the Project were analyzed. **Figure 4** shows the study area is shown and collision by severity. These include collisions in Elk Grove. The study area was finalized such that it included all key roadways near the Project site.

Table 12 shows the number of collisions in the study area and their location by year. A total of 205 collisions were reported in the analysis period of which around 34 percent occurred at intersections and 66 percent occurred mid-block. Further, total 17 collisions involved pedestrians or bicyclists. Of these, one collision involving pedestrians resulted in fatalities. The fatal collision took place on Sheldon Road 1355 ft west of the Bradshaw Road intersection. It was due to pedestrian code violation with poor lighting condition (Dark– no streetlight).

⁵ <https://tims.berkeley.edu/>

The dataset between January 1, 2023 and September 30, 2024 is considered provisional and therefore may change.

Table 12: Collision History Within ½ Mile of the Project

Year	Total Collisions	Location		Involved Party	
		Intersection	Mid-Block	Pedestrian	Bicycle
2020	45	26	19	2	0
2021	41	26	15	1	2
2022	40	25	15	3	2
2023	45	33	12	1	1
2024	34	26	8	5	0
All	205	136	69	12	5

Sources: SWITRS 2025, TIMS 2025, Fehr & Peers, 2025

Collisions that result in some injuries are categorized into the following four degrees of severity:

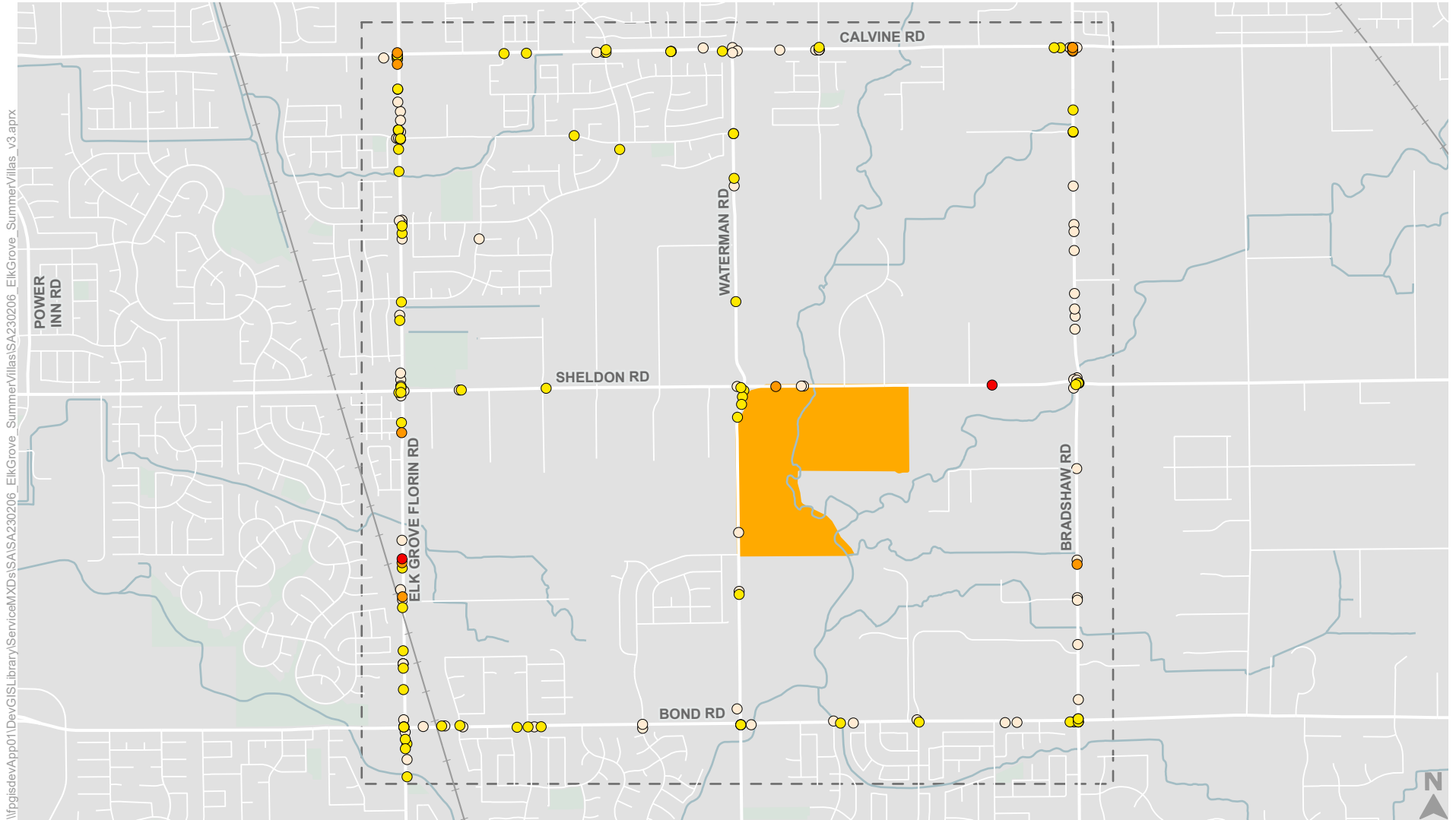
Fatal
Severe Injury
Visible Injury
Injury.

Table 13 describes this data by year of collision for the study area. Around 4 percent of total collisions were identified as KSI (Fatal and Severe Injury) collisions. 30 percent of total collisions resulted in visible injuries and 66 percent resulted in minor injuries. The 2nd fatal collision involved a motor cyclist and took place on Sheldon Road, 1,355ft west of Sheldon Road/Bradshaw Road intersection.

Table 13: Collision by Severity

Year	Total Collisions	Severity			
		Fatal	Severe Injury	Visible Injury	Injury (Complaint of Pain)
2020	45	0	3	14	28
2021	41	0	2	12	27
2022	40	1	0	19	20
2023	45	1	2	15	27
2024	34	0	2	13	19
All	205	2	9	73	121

Sources: SWITRS 2025, TIMS 2025, Fehr & Peers, 2025



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 Project Boundary

Collisions by Severity 2020 - 2024

-  Fatal
-  Injury (Severe)
-  Injury (Other Visible)
-  Complaint of Pain

 Collision Boundary

Figure 4

Collisions by Severity



4.2. Traffic Operations

Turning Movement Counts (TMCs) were collected at the five study intersections on Tuesday, August 20, 2024 from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. Counts were recorded for each 15-minute increment during those periods, and the peak hour was defined as the four consecutive 15-minute periods with the greatest total vehicle volume. The AM and PM peak hours for each intersection are listed below.

Waterman Rd/Sheldon Road: 7:30 AM – 8:30 AM and 4:00 PM – 5:00 PM
Waterman Road/Calvine Road: 7:30 AM – 8:30 AM and 4:00 PM – 5:00 PM
Waterman Road/Bond Road: 7:30 AM – 8:30 AM and 5:00 PM – 6:00 PM
Elk Grove Florin Road/Sheldon Road: 7:45 AM – 8:45 AM and 4:45 PM – 5:45 PM
Bradshaw Road/Sheldon Road: 7:30 AM – 8:30 AM and 4:00 PM – 5:00 PM

Detailed TMC count sheets with vehicle, bike, and pedestrian volumes can be found in **Appendix A**.

Under General Plan buildout conditions, roadways are assumed to be built to their ultimate as per the City of Elk Grove General Plan. All signalized intersections are assumed to have standard lane configuration as per the City of Elk Grove design guidelines. This assumes a minimum of two left-turn pockets, two through lanes, and one right-turn pocket. Intersection turning movement volumes, traffic control, and lane configurations under existing and Buildout Conditions are shown on the following figures:

- Figure 5:** Existing (ENP) Conditions
- Figure 6:** Existing Plus Project (E+P) Conditions
- Figure 7:** Existing Plus Approved Projects (E+AP) Conditions
- Figure 8:** Existing Plus Approved Projects Plus Project (E+AP+P) Conditions
- Figure 9:** General Plan Buildout (CNP) Conditions
- Figure 10:** General Plan Buildout Plus Project (C+P) Conditions

4.2.1. Intersection Operations

Table 14 summarizes intersection performance under all six scenarios with and without the proposed Project. **Appendix B** includes delay reports for intersections for all scenarios.

As shown, under the Existing Plus Project and Existing Approved Project Plus Project conditions, Waterman Road and Sheldon Road will exceed the delay threshold during AM peak hour. Waterman Road and Calvine Road intersection currently exceed the delay target thresholds. The Project increases delay at this intersection.

Under the buildout conditions, the Waterman Road/Sheldon Road intersection, Waterman Road/Calvine Road intersection, and the Bradshaw Road/Sheldon Road intersection all exceed target thresholds. Under the plus project scenario, delay increases at all three intersections. All signal timings were optimized under buildout scenarios. Improvement recommendations to reduce delay are discussed in Chapter 7.

Table 14: Intersection Operations – Existing and Existing Plus Project Conditions

Intersection	Traffic Control	Performance Delay Target	Peak Hour	Delay (seconds)					
				Existing		Near Term	General Plan Buildout		
				ENP	E+P	E+AP	E+AP+P	CNP	C+P
1: Waterman Road/Sheldon Road	Roundabout	< 35.1	AM	23	38	24	40	97	134
			PM	16	20	17	21	64	80
2: Waterman Road/Calvine Road	Signal	< 55.1	AM	73	76	74	76	73	73
			PM	53	54	52	55	49	49
3: Waterman Road/Bond Road	Signal	< 55.1	AM	42	43	43	44	53	54
			PM	31	31	31	31	37	37
4: Elk Grove Florin Road/Sheldon Road	Signal	< 55.1	AM	36	38	37	38	48	52
			PM	37	37	37	38	45	47
5: Bradshaw Road/Sheldon Road	Roundabout	< 35.1	AM	21	23	21	23	66	70
			PM	18	19	19	20	103	108

Notes:

Delay in **Bold** indicates delays that exceed performance targets.

Delays are rounded to the nearest whole number.

Source: Fehr & Peers, 2025

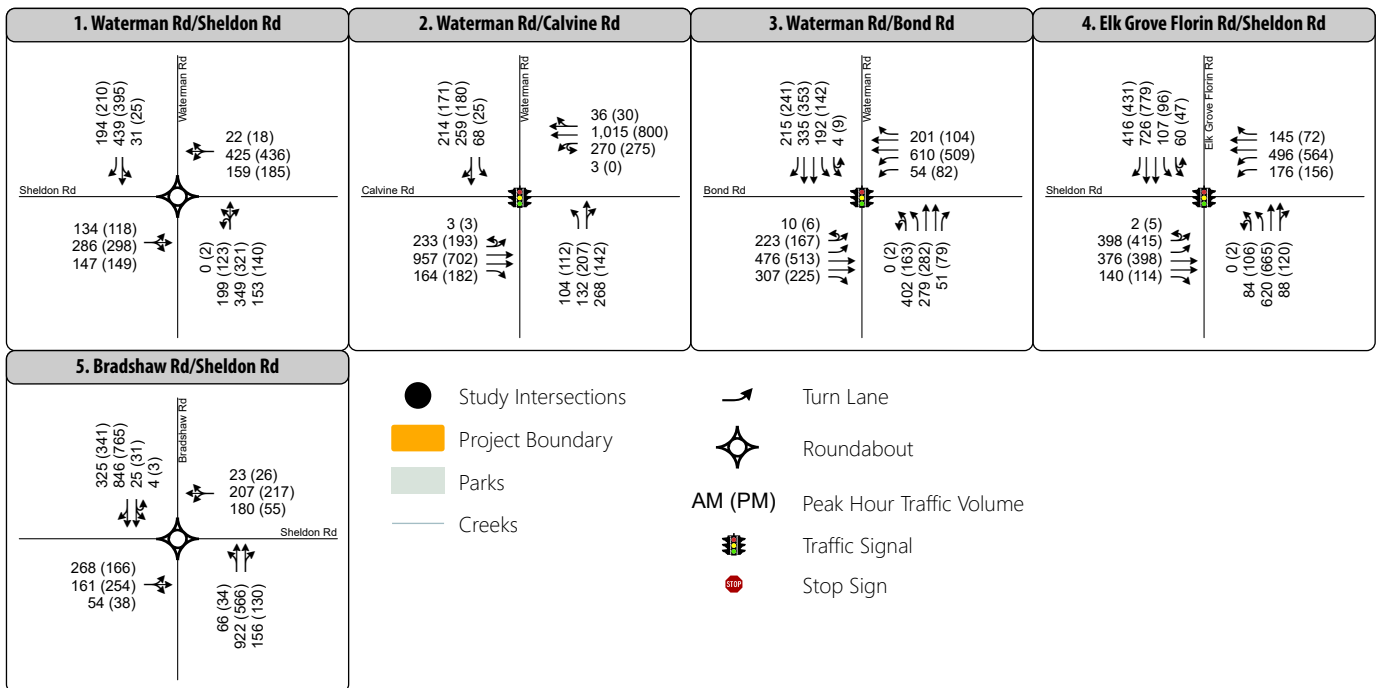
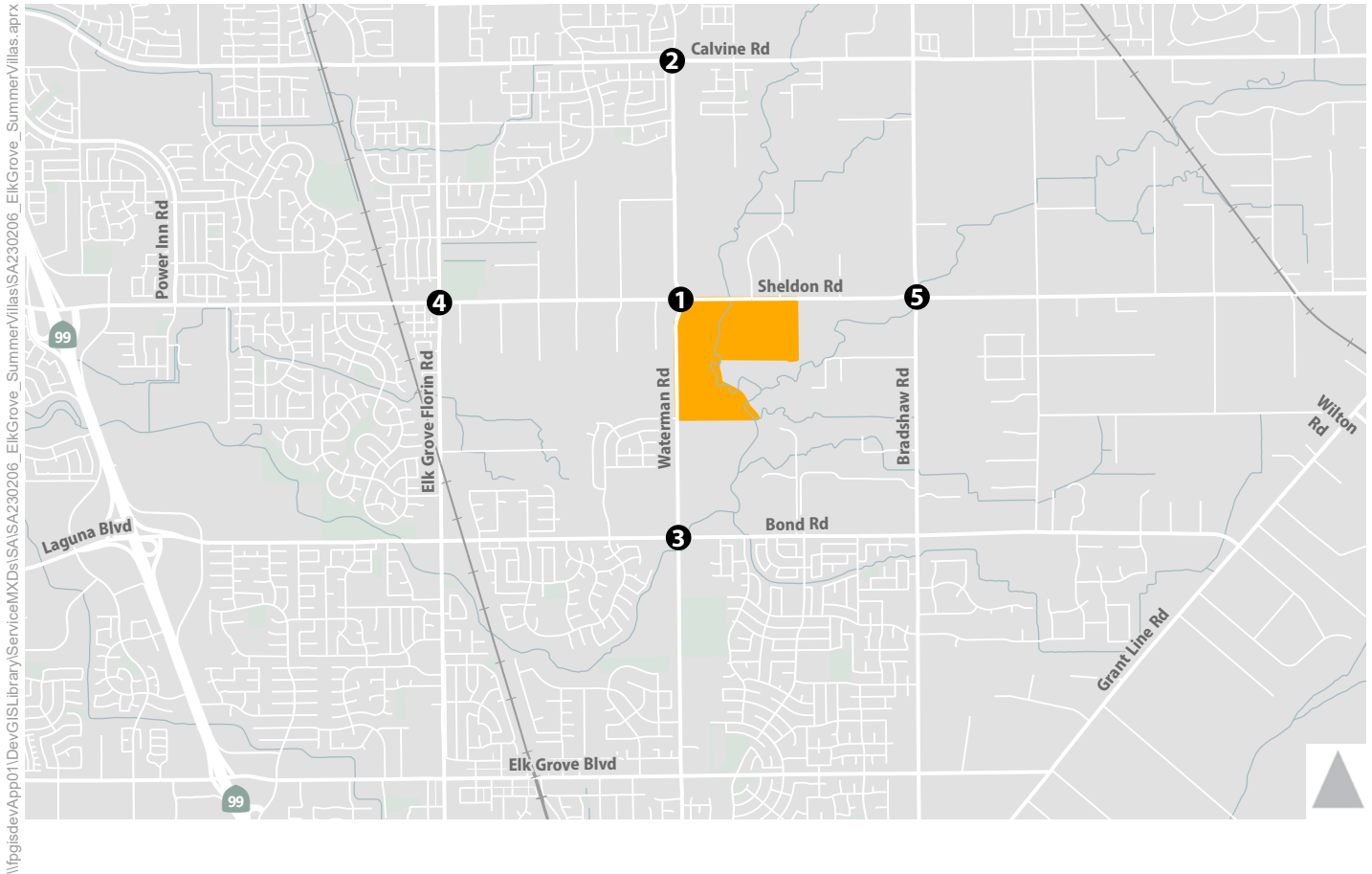


Figure 5

Peak Hour Traffic Volumes
and Lane Configurations -
Existing Conditions



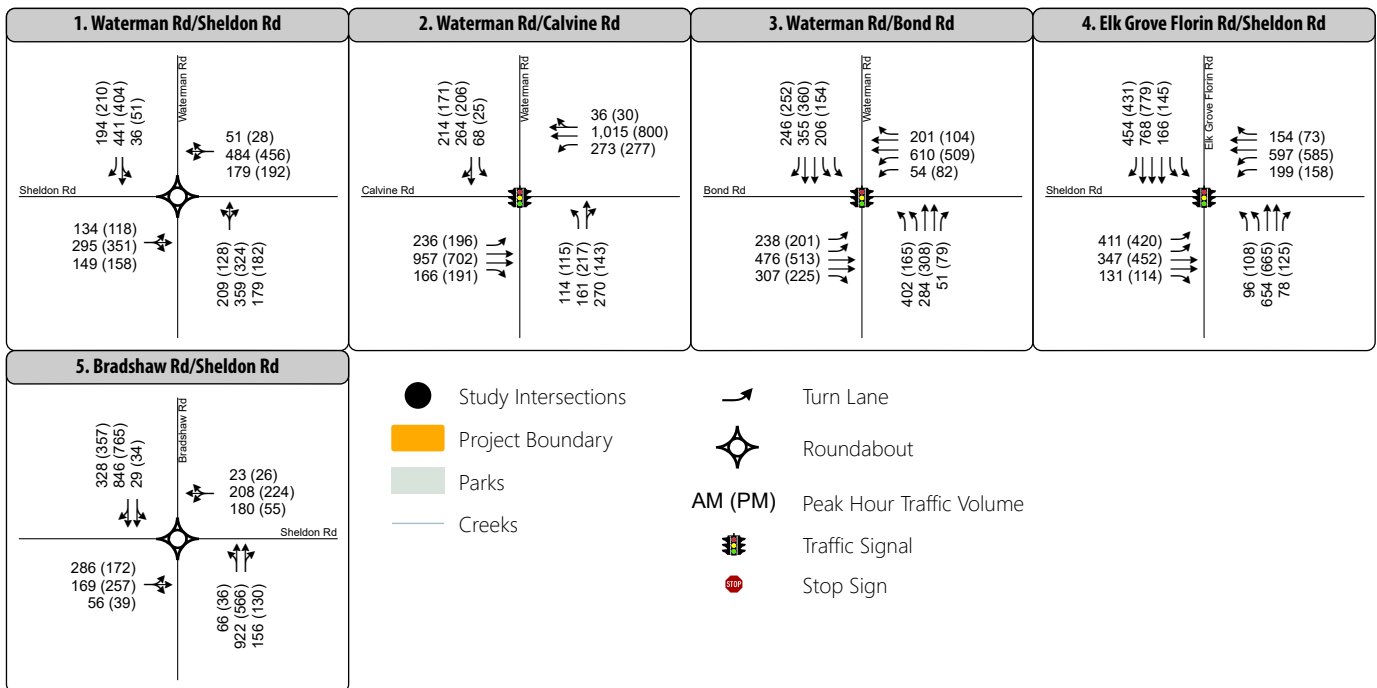
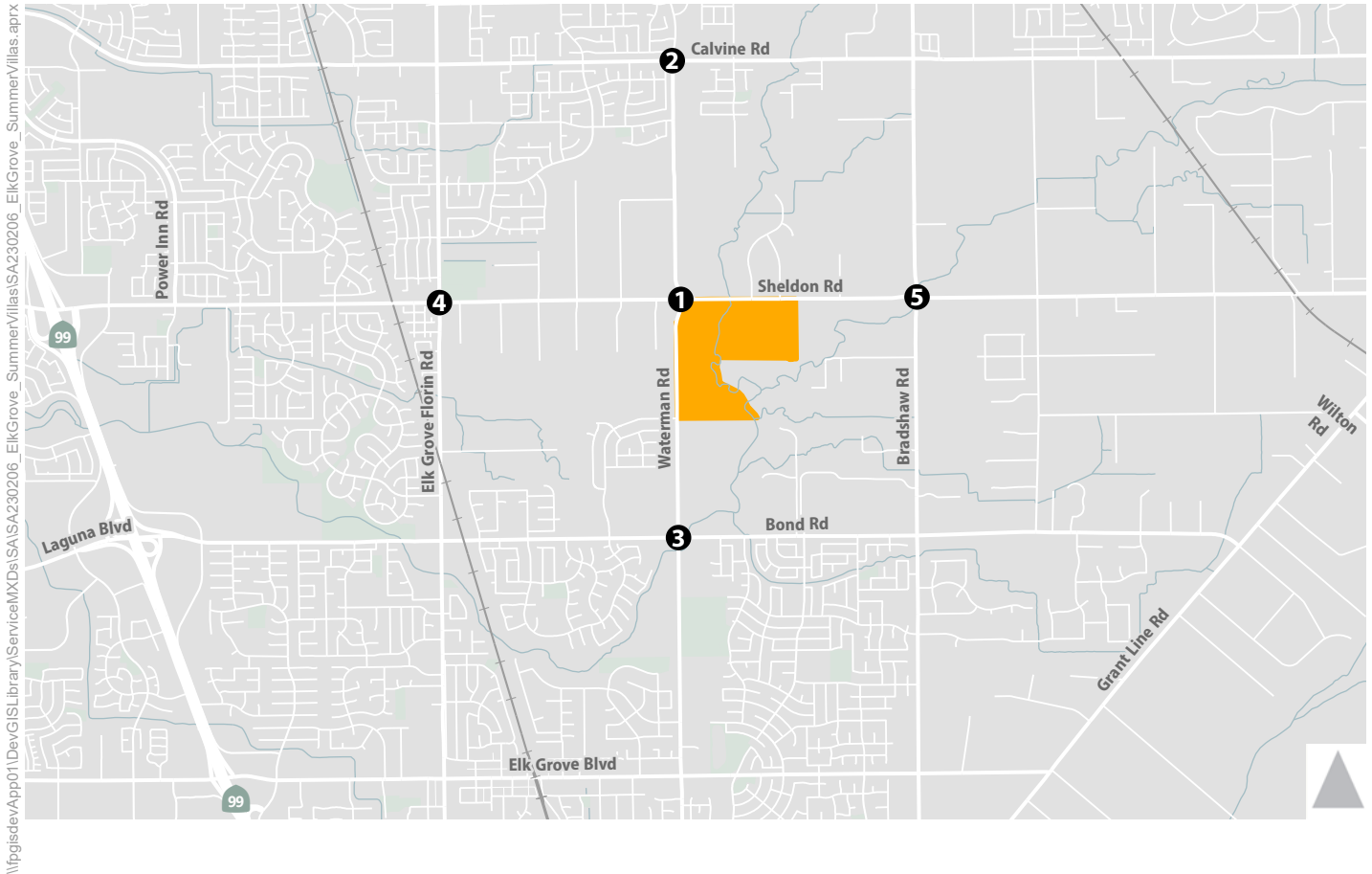


Figure 6

Peak Hour Traffic Volumes
and Lane Configurations -
Existing Plus Project Conditions



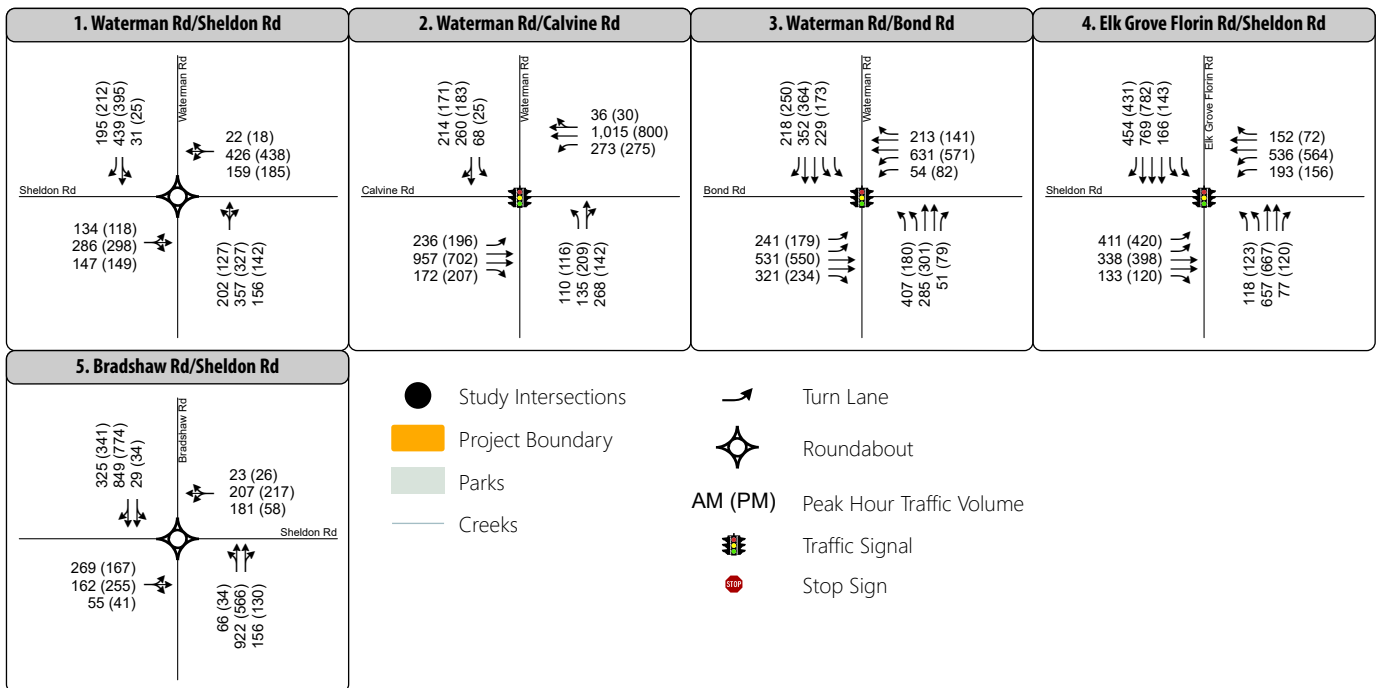
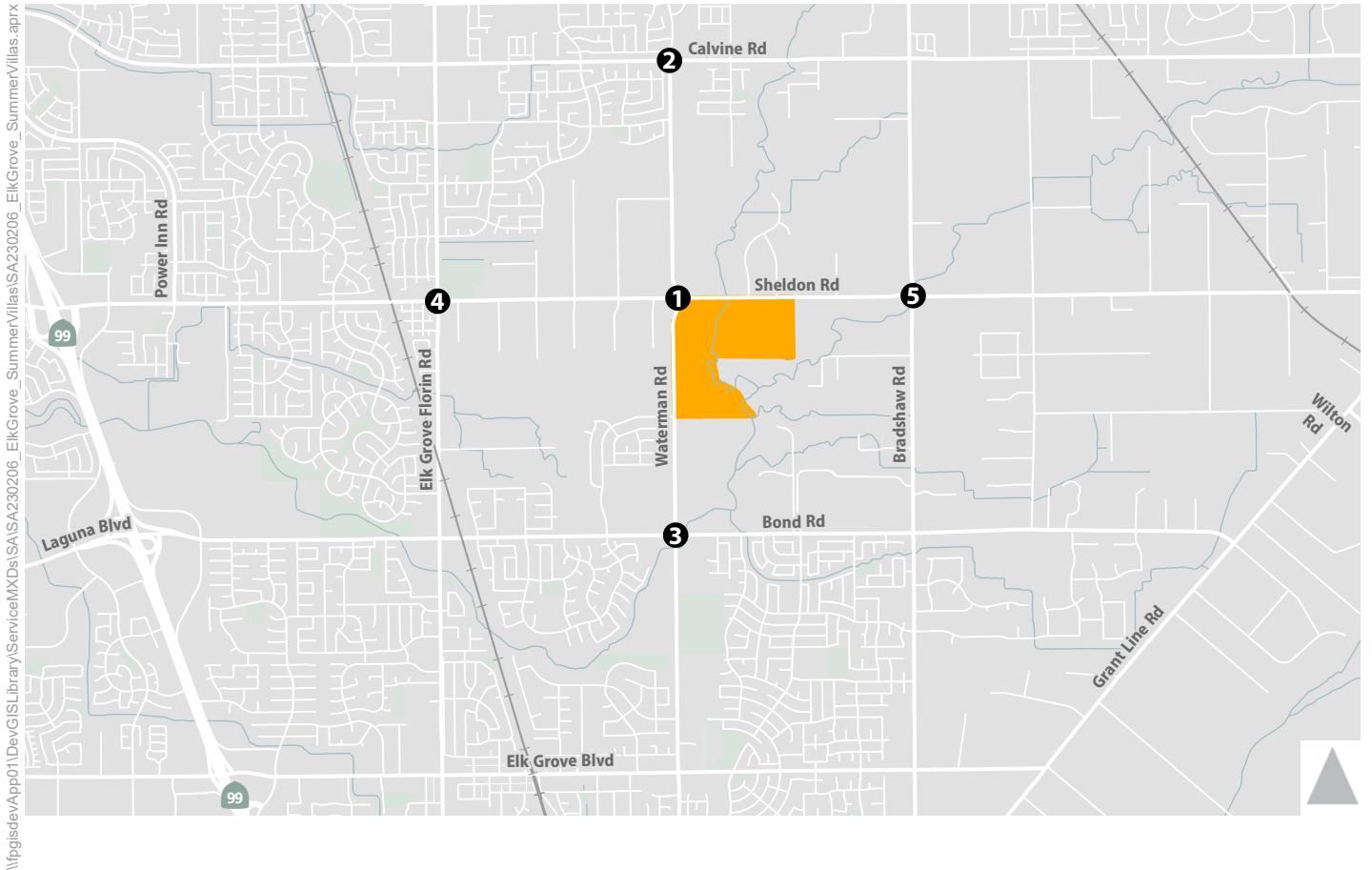


Figure 7

Peak Hour Traffic Volumes
and Lane Configurations -
Existing Plus Approved Project Conditions



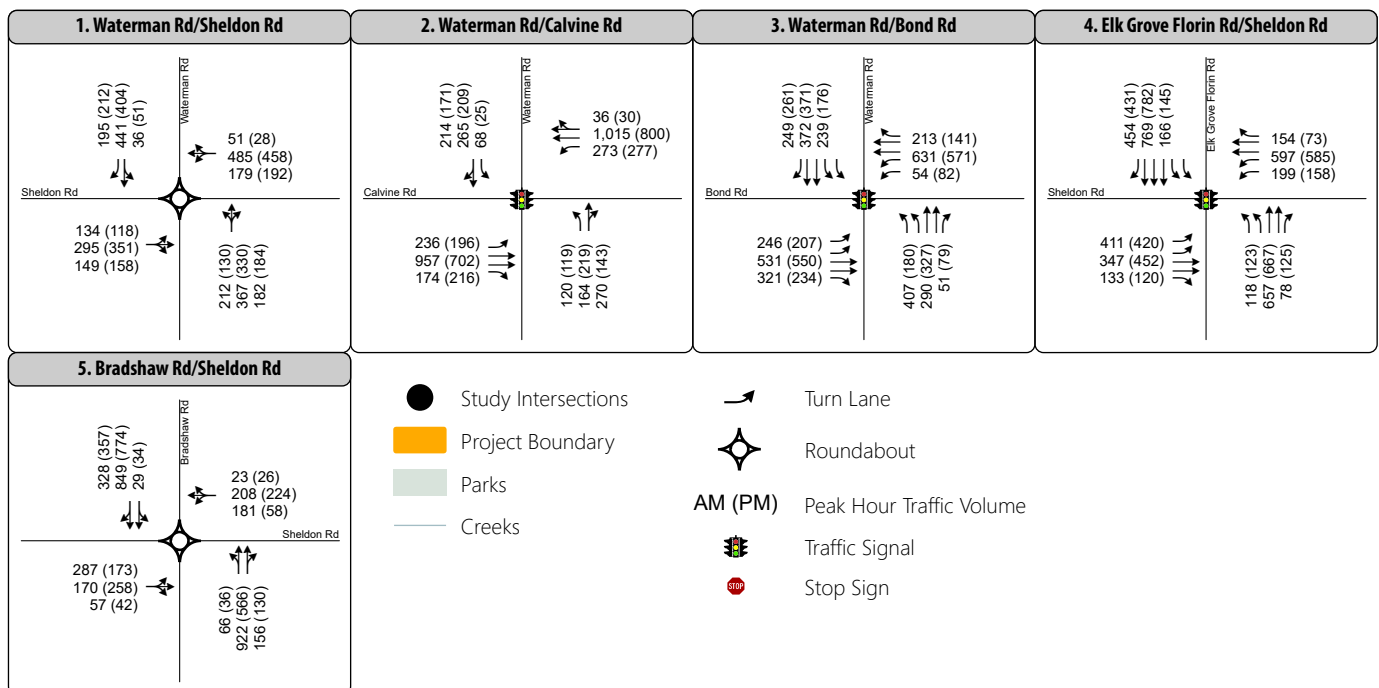
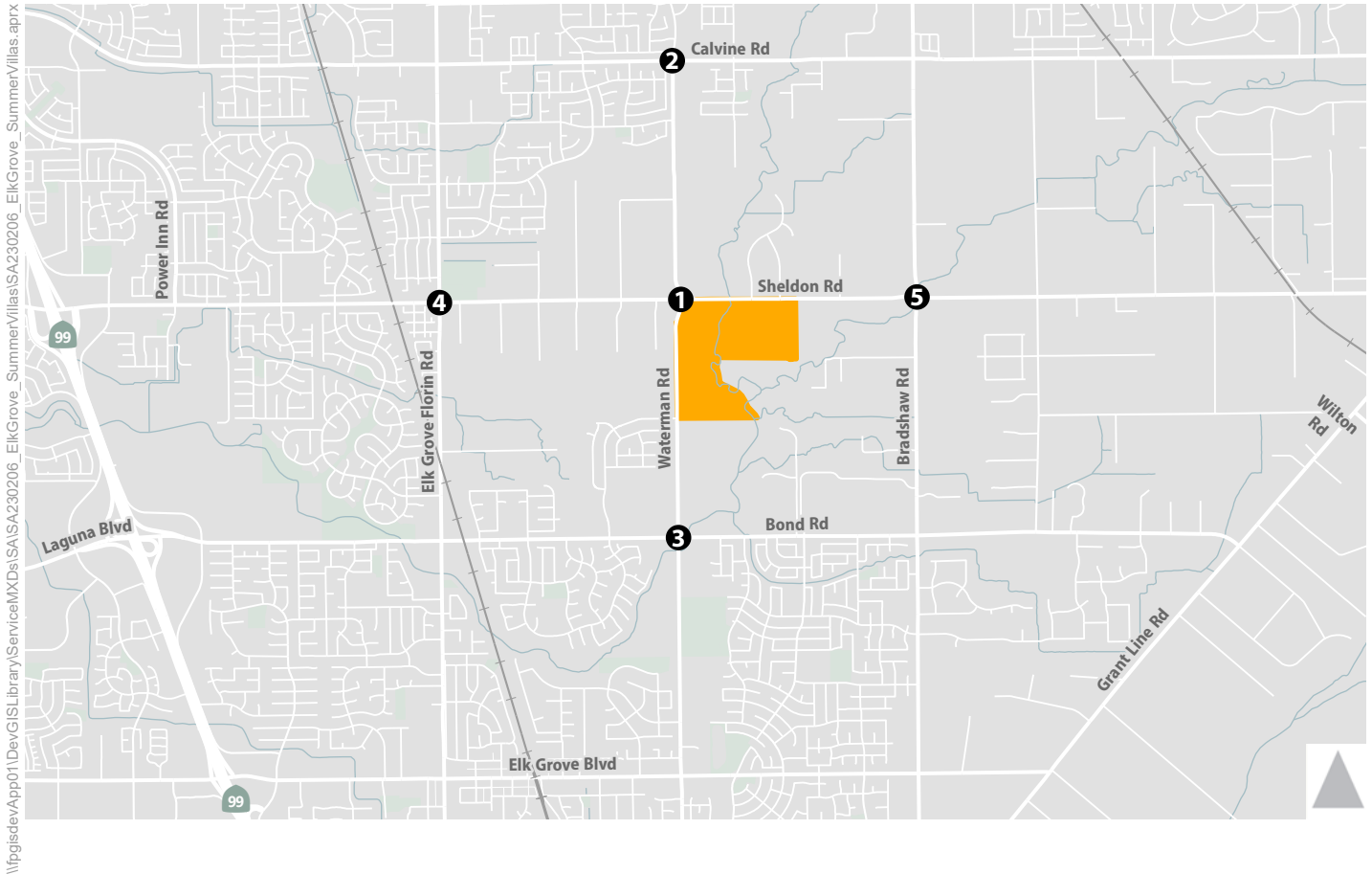


Figure 8

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Project Plus Project Conditions



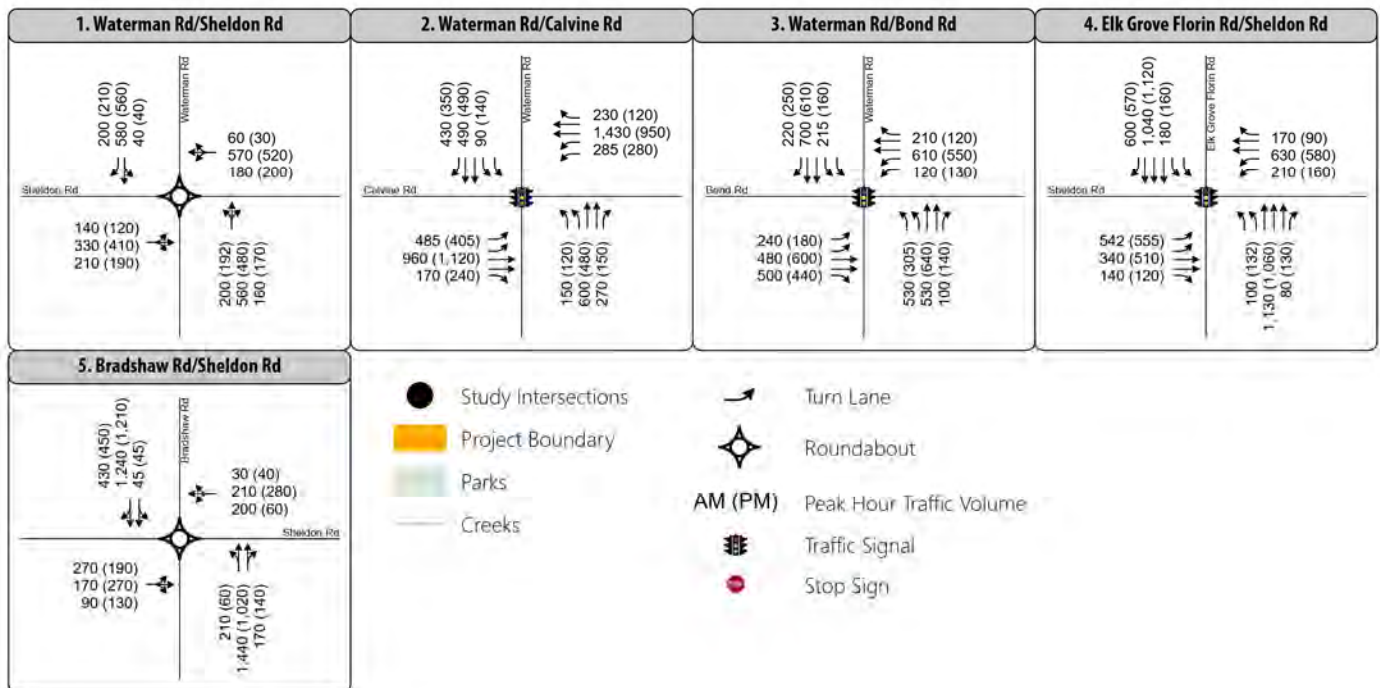
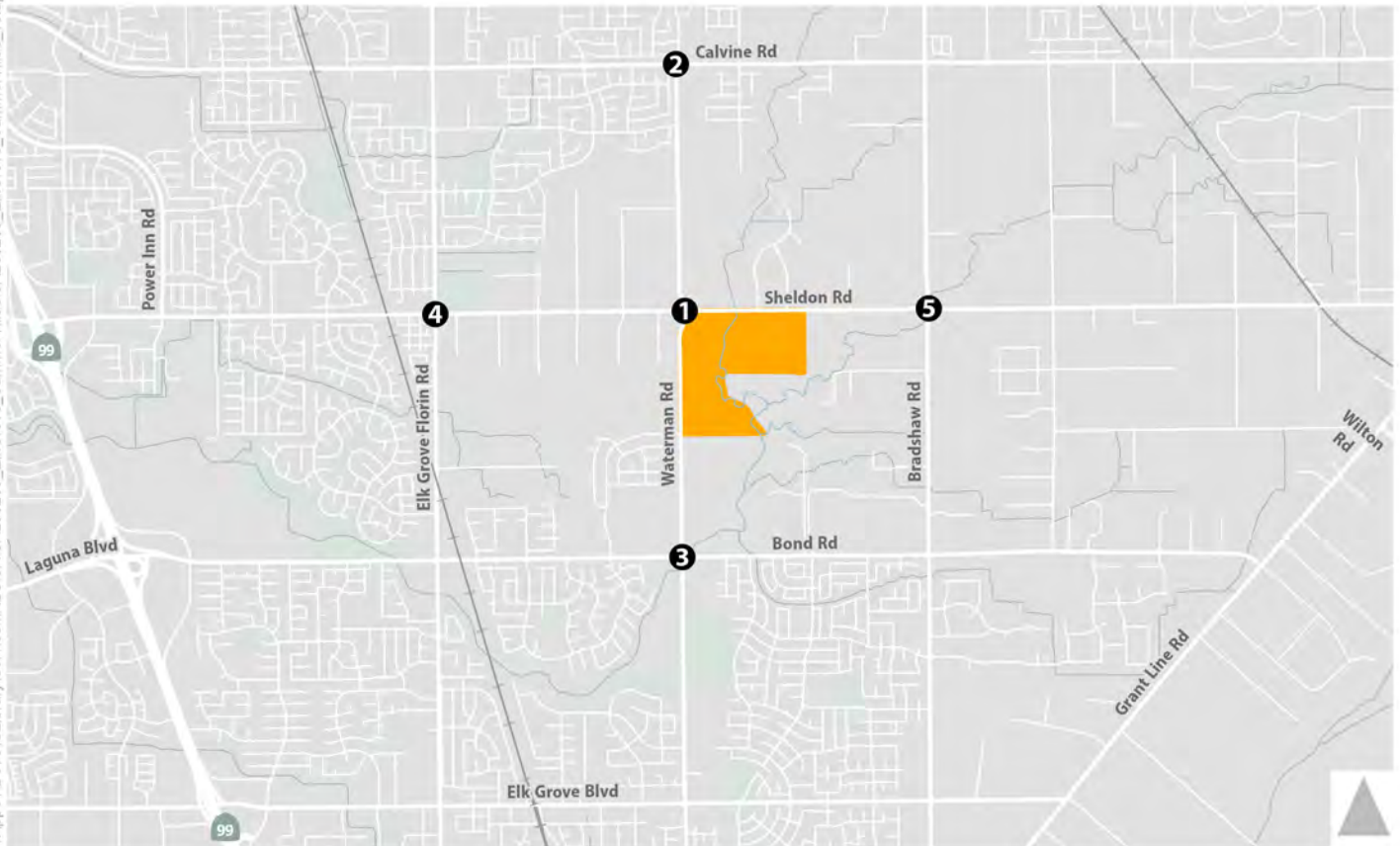


Figure 11

Peak Hour Traffic Volumes
and Lane Configurations -
Cumulative No Project Conditions



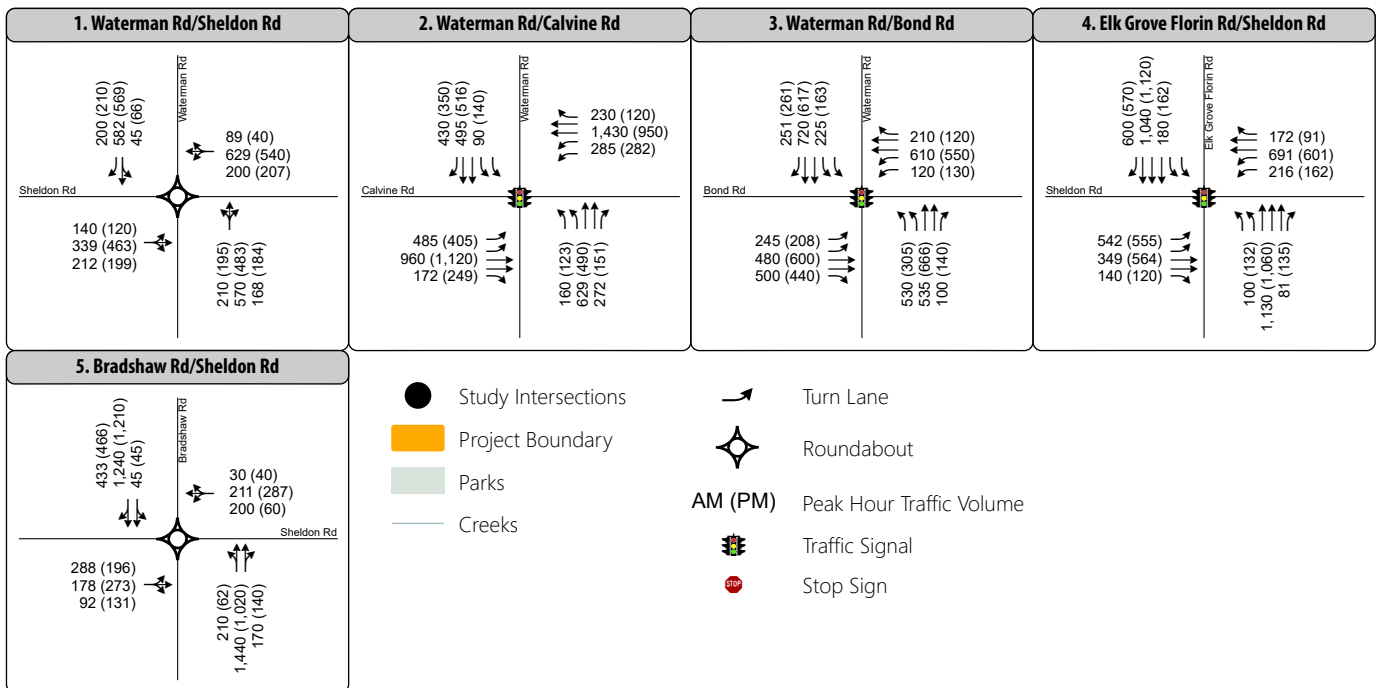
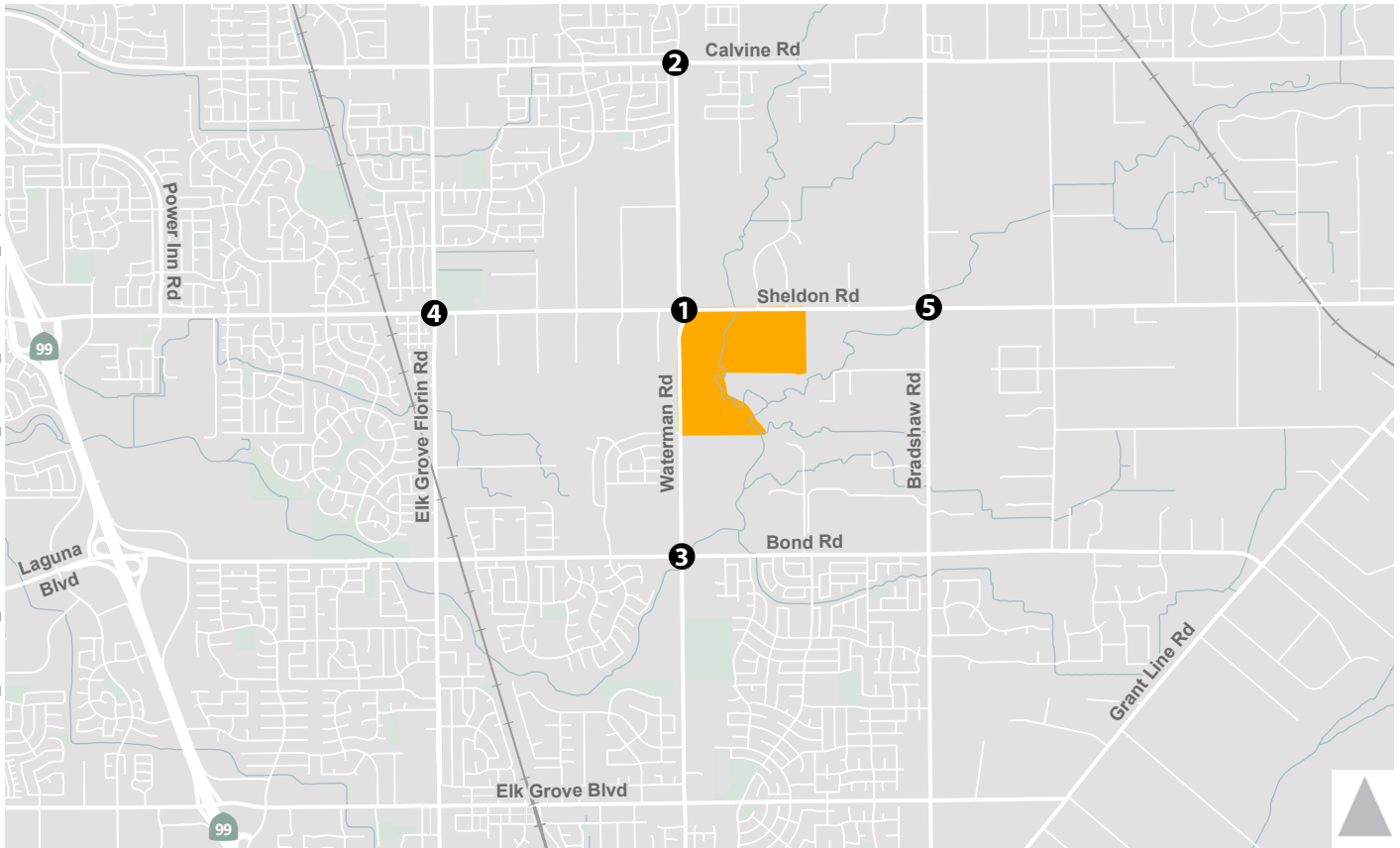


Figure 10

Peak Hour Traffic Volumes
and Lane Configurations -
Cumulative Plus Project



4.2.2. Roadway Operations

Table 15 summarizes the Average Daily Traffic (ADT) of study roadway segments with or without the Project against the design targets for Existing, Existing Plus Approved Project, and General Plan Buildout scenarios consecutively.

As shown, Sheldon Road from Elk Grove Florin Road to Waterman Road will exceed the design target under General Plan Buildout Plus Project conditions. Waterman Road from Sheldon Road to Bond Road will exceed the design target under General Plan Buildout and General Plan Buildout Plus Project.

Improvement recommendations are discussed in Chapter 7.

Table 15: Daily Roadway Performance

Roadway	Segment	Daily Roadway Volume									
		Existing				Near-Term		General Plan Buildout			
		Lanes	Design Target	ENP	E+P	E+AP	E+AP+P	Lanes	Design Target	CNP	CPP
Sheldon Road	Lewis Stein Road to SR 99	6	51,500	31,350	31,500	31,600	31,600	6	51,500	41,600	41,700
	Elk Grove Florin Road to Waterman Road ¹	2	16,600	13,800	14,900	13,900	14,900	2	16,600	15,800	16,900
	Waterman Road to Bradshaw Road ¹	2	16,600	11,100	11,600	11,200	11,600	2	16,600	13,300	13,700
Elk Grove Florin Road	Calvine Road to Sheldon Road	4	37,200	26,700	26,800	26,900	26,800	6	54,000	44,100	44,100
	Sheldon Road to Bond Road	4	37,200	22,800	22,900	23,300	23,400	4	37,200	34,200	34,300
Waterman Road	Sheldon Road to Bond Road ¹	2	17,700	12,470	13,400	12,800	13,700	2	17,700	19,300	20,300
	Calvine Road to Sheldon Road ¹	2	17,700	11,100	11,800	11,300	11,900	2	17,700	15,700	16,400
	Bond Road to Elk Grove Blvd	2	17,700	10,300	10,400	10,400	10,400	4	37,200	22,400	22,400
Bradshaw Road	Sheldon Road to Bond Road	3	26,500	16,100	16,300	16,200	16,300	4	37,200	27,600	27,700
Calvine Road	Elk Grove Florin Road to Waterman Road	4	37,200	29,520	29,600	29,600	29,500	6	54,000	45,000	45,000
	Waterman Road to Bradshaw Road	5	45,600	19,000	19,400	20,300	20,600	5	45,600	28,800	29,100
Bond Road	E. Stockton Blvd to Emerald Crest Dr	6	54,000	28,500	29,100	31,100	31,600	6	54,000	34,500	35,000
	Elk Grove Florin Road to Waterman Road	4	37,200	20,800	20,900	22,500	22,500	4	37,200	26,100	26,100
	Waterman Road to Bradshaw Road	4	37,200	17,300	17,300	17,300	17,300	4	37,200	21,100	21,100

Notes:

¹The study segments of Sheldon Road are located in Elk Grove's Rural Area and are subject to the Elk Grove Rural Road Improvement Policy. The study segments of Waterman Road a half mile north and south of Sheldon Road are in Elk Grove's Rural Area and are subject to the Elk Grove Rural Road Improvement Policy.

Volumes in **Bold** indicate daily volumes that exceed daily design targets. Volumes are rounded to the nearest 100.

Source: Fehr & Peers, 2025

5. Bicycle/Pedestrian/Transit Facilities and Services

This section discusses the conditions of bicycle and pedestrian facilities and transit service with the addition of the proposed Project.

5.1. Existing & Planned Transportation System

The existing bicycle and pedestrian facilities in the Project vicinity are shown in **Figure 11**.

5.1.1. Bicycle Facilities

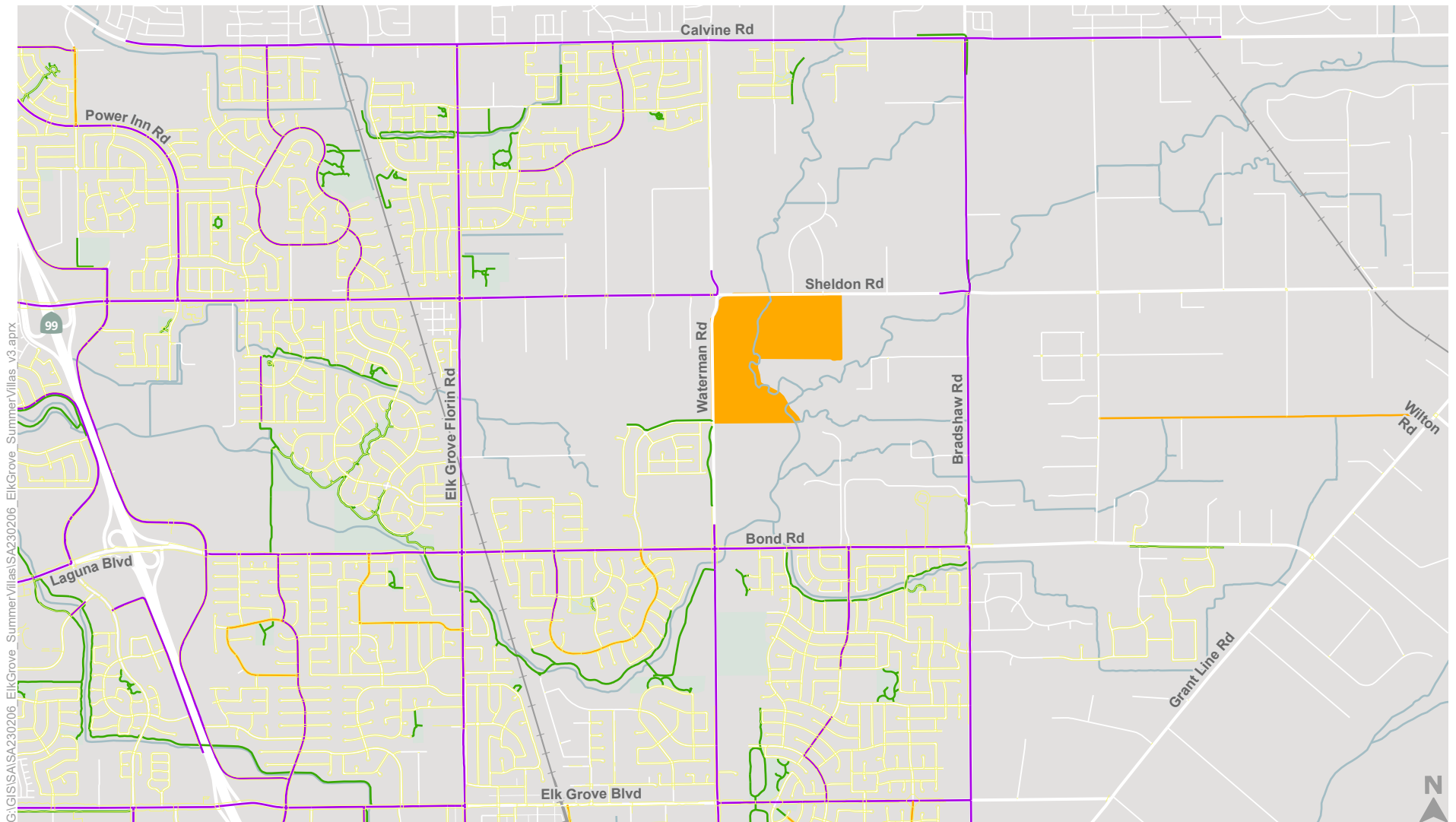
Shoulders are currently striped as Class II Bicycle Lanes along Waterman Road and Sheldon Road to the west of Waterman Road. There is a new multi-use path constructed as part of the sub-division in the southwest corner of the project. Sheldon Road / Waterman Road intersection has recently improved roundabout bicycle crossing. *City of Elk Grove Bicycle, Pedestrian, & Trails Master Plan*, May 2021 (BPTMP)⁶ has the goal to reduce the percent of arterial streets that are Level of Traffic Stress (LTS) 4 from 84 percent to 70 percent by 2040.

The BPTMP and the Rural Road Improvement standards propose Class II Buffered Bicycle lanes along Waterman along the Project frontage and Class I Multi-Use Path along Sheldon Road between Elk Grove Florin Road and Waterman Road. Class I Multi-Use Path is also proposed along the Project frontage parallel to Waterman Road. Rural Road Improvement standard proposes bike lanes along Sheldon Road within the Rural Residential area of the City.

5.1.2. Pedestrian Facilities

In general, sidewalks are not present on Sheldon Road, Waterman Road, or Bradshaw Road. There is a new multi-use path constructed as part of the sub-division in the southwest corner of the project. The City of Elk Grove BPTMP and Rural Road Improvement Standards propose a planned Class I multi use path along Waterman Road that could be used for pedestrian access that will connect to the existing sidewalks on Bond Road and Calvine Road. These connections are dependent upon future Project development. The most immediate connection would be an at-grade crossing at Elliott Springs Drive at the South-West corner of the site to access the existing off-street trails on the north side of Elliott Springs Drive and west side of Waterman Road. This will provide access to Calvine Road and Bond Road. Other improvements are not planned to be implemented in the short-term. However, sidewalks are not planned along either Sheldon Road near the Project site.

⁶ City of Elk Grove Bicycle, Pedestrian, & Trails Master Plan, May, 2021
<https://www.elkgrovecity.org/sites/default/files/city-files/Departments/SPI/BPTMP/May%202021%20Final%20BPTMP%20Plan.pdf>



- Sidewalks
- Existing Class I Multi-Use Path
- Existing Class II Bike Lane
- Existing Class III Bike Route
- Project Boundary
- Parks

Figure 11



Local Roadways with Existing Bicycle and Pedestrian Facilities

5.1.3. Transit Facilities

There are currently no transit facilities within half a mile of the proposed Project. The nearest bus stops are one mile away at Elk Grove–Florin Road / Sheldon Road (West), Bond Road / Waterman Road (South), and Calvine Road / Waterman Road (North). There are four current bus routes operated by Sacramento Regional Transit (SacRT) that serve these three bus stops. **Figure 12** shows transit facilities discussed below.

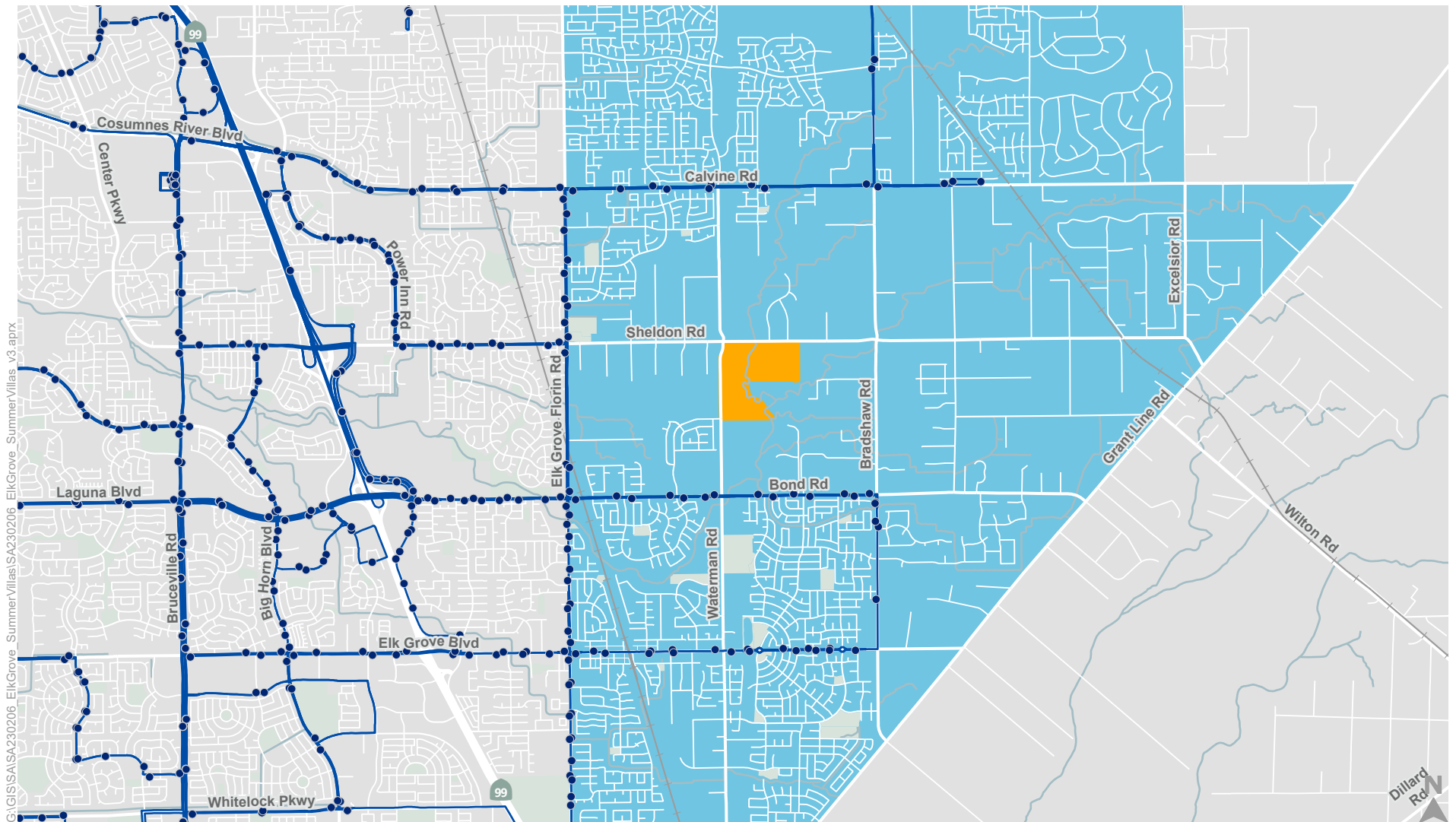
Route E114 is a local route that provides service between Bradshaw Christian High School and Sheldon High School at Bradshaw Road and Calvine Road. This route serves Cosumnes River College through to the Laguna and Laguna West neighborhoods. This route operates Monday through Friday from approximately 6:00 AM to 8:00 PM and from 7:00 AM to 5:30 pm on Saturdays. Generally, the route runs hourly. The nearest stop is at Calvine Road and Waterman Road one mile north of the Project.

Route E115 is a local route that provides service from Elk Grove Boulevard at Clarke Farms Drive to Cosumnes River College via Bond Road and Sheldon Road. This route runs Monday through Friday from approximately 6:00 AM to 8:00 PM Westbound to Cosumnes River College and 8:30 AM to 9:00 pm Eastbound. The nearest stop is 1-mile west of the Project at Sheldon Road and Elk Grove–Florin Road.

Route E19 is a commuter route that provides service from the Laguna West at Harbour Point Drive to the Butterfield Light Rail Station on Folsom Boulevard. This route runs every hour Monday through Friday from 5:00 AM to 7: AM heading to the Light Rail Station and returning every hour from 3:00 pm to 5:00 pm. The nearest stop is one mile west at Sheldon Road and Elk Grove–Florin Road.

Route E15 is a commuter route that provides service from Bond Road at Bradshaw Road near Katherine Albiani Middle School / Pleasant Grove High School to Downtown Sacramento. This route provides two buses towards Sacramento in the morning at 6:15 AM and 6:45 AM and two buses returning to Elk Grove in the evening at 4:15 PM and 4:45 PM. The nearest stop is one-mile northwest at Bond Road and Elk Grove–Florin Road.

SacRT Flex SacRT has converted their SmaRT Ride program into SacRT Flex program. SmaRT Ride was an on-demand service operated by SacRT similar to ride-share services where customers can use a smartphone app to request a ride that will pick up and drop off passengers within the service boundaries. Due to operation budget issues, this program has been consolidated to the Flex program which will be only available for low income and persons with disability. SacRT Flex will be operated by Via. The Project is within the Elk Grove SacRT Flex zone. This service only operates within its designated zone. SmaRT Ride is available Monday through Friday from 7 AM. to 7 PM.



- Project Boundary
- SacRT Stops
- SacRT Routes
- SacRT Flex Zone

Figure 12



5.2. Multimodal Traffic Level of Stress

5.2.1. Bicycle Streetscore LTS

The BPTMP designates Sheldon Road as a High Level of Stress (LTS 4) along its length. Waterman is designated as LTS 4 north of the Project and LTS 3 along the Project frontage. All approaches at Waterman Road and Sheldon Road intersection are also designated as LTS 4. As shown in **Table 12**, a bicycle collision near the Project site has resulted in fatality in the last 3 years. **Table 16** summarizes Bicycle Streetscore LTS with the addition of the proposed Project on Sheldon Road and Waterman Road. As shown in **Table 16**, the LTS will remain unchanged with the addition of the proposed Project. The LTS score is due primarily to the travel speed and lack of bicycle infrastructure on Sheldon and Waterman Road. The proposed Project does not include accommodation for any off-site bicycle improvements.

Table 16: Bicycle Street Score LTS – Existing Conditions

Roadway	Segment	LTS	
		Existing	Existing With Project
Sheldon Road	Waterman Road to Bradshaw Road	4	4
	Waterman Road to Elk Grove Florin Road	4	4
Waterman Road	Sheldon Road to Calvine Road	4	4
	Sheldon Road to Bond Road	3	3

Source: Fehr & Peers, 2025

5.2.2. Pedestrian Streetscore LTS

Table 19 summarizes Pedestrian Streetscore LTS with the addition of the proposed Project on Sheldon Road and Waterman Road. As shown in **Table 17**, the LTS will remain at LTS 4 with addition of the proposed Project. The LTS score is due primarily to the lack of pedestrian facilities on the study roadways and travel speed. The proposed Project does not include accommodation for any off-site pedestrian improvements.

Table 17: Pedestrian Street Score LTS – Existing Conditions

Roadway	Segment	LTS	
		Existing	Existing With Project
Sheldon Road	Waterman Road to Bradshaw Road	4	4
	Waterman Road to Elk Grove Florin Road	4	4
Waterman Road	Sheldon Road to Calvine Road	4	4
	Sheldon Road to Bond Road	4	4

Source: Fehr & Peers, 2025

6. Impacts and Mitigation Measures

This chapter identifies Project-specific and cumulative impacts of the proposed Project. Impact statements are provided for the topics of VMT and roadway safety, which are the criteria used to evaluate roadway system impacts. Impact statements are also provided for the bicycle, pedestrian, and transit systems. Mitigation measures are recommended for significant impacts.

6.1. Regulatory Background

The following regulations, policy and guidelines are relevant to the transportation analysis.

6.1.1. SB 743

SB 743, passed in 2013, required the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." In December 2018, OPR published *Technical Advisory on Evaluating Transportation Impacts in CEQA* ("Technical Advisory"), which provided guidance for implementing SB 743. On December 28, 2018, the Resources Agency adopted CEQA Guidelines Section 15064.3. Under this guideline, VMT is the primary metric used to identify transportation impacts. On July 1, 2020, the provisions of Section 15064.3 became effective statewide.

6.1.2. City of Elk Grove General Plan

The City of Elk Grove General Plan, amended December 2023, is a fundamental planning document that directs future growth, development, and conservation policy and reflects the long-range vision of the community. The Mobility chapter of the General Plan contains policies designed to further the City's mobility strategy. The Mobility chapter incorporates and expands the City's complete streets policies; supports key implementation tools, such as the Bicycle, Pedestrian, and Trails Master Plan, the Transportation Analysis Guidelines, and the Climate Action Plan; and identifies measures to support alternative transportation investments, as well as transit-friendly and active transportation-friendly development. It should be noted that a Project's effect on automobile delay is no longer a consideration when identifying a significant impact under CEQA.

6.1.3. City of Elk Grove Transportation Analysis Guidelines

Transportation Analysis (TA) Guidelines, updated July 2023, provides guidance regarding the City's preferred methods for conducting transportation analysis. The TA guidelines incorporate various elements of the *Technical Advisory*, OPR, but refinements and clarifications have been added to reflect local conditions. The guidelines also include requirements for multimodal (bicycle, pedestrian, and transit) transportation analysis, hazards related to design, on-site circulation, and construction. Currently, the City is updating its Transportation Analysis Guidelines. Table 9 of the guidelines also establishes design targets for roadway segments based on the daily two-way total volumes.

6.1.4. City of Elk Grove Rural Road Improvement Policy and Standards

The City of Elk Grove Rural Road Policy, updated December 2019, is intended to preserve and maintain the rural roadways in the City's rural residential area. The policy establishes a value-based approach for incremental (rather than ultimate) road improvements that solve specific traffic issues identified through periodic evaluations of traffic conditions. Road improvements within the City's defined rural residential area shall be implemented in response to traffic impacts.

The Rural Road Improvement Standards implement the General Plan goals, policies, and actions. These standards implement the provisions of the Land Use and Circulation Elements regarding the maintenance of features that create the rural character. This document replaces the Citywide Improvement Standards for design details associated with road improvements for the City's designated rural/residential area

6.1.5. City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan

The *City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan* (BPTMP), May 2021 is intended to guide and influence pedestrian, bicycle, and trail policies, programs, and development standards to make biking and walking in the City more safe, comfortable, convenient, and enjoyable for all community members. The goal of the master plan is to increase the number of persons who walk and bicycle for transportation to work, school, and errands and for recreation. The plan identifies existing facilities, opportunities, constraints, destination points for bicycle users and pedestrians, and proposed bicycle and pedestrian improvements.

The Rural Road Improvement Standards implement the General Plan goals, policies, and actions. These standards implement the provisions of the Land Use and Circulation Elements regarding the maintenance of features that create the rural character. This document replaces the Citywide Improvement Standards for design details associated with road improvements for the City's designated rural/residential area.

6.2. Thresholds of Significance

The following thresholds of significance are used to evaluate the significance of Project impacts to the roadway, bicycle, pedestrian, and transit systems. The significance criteria used to evaluate Project impacts on transportation under CEQA are based on Appendix G of the State CEQA Guidelines, as well as thresholds of significance adopted in the City General Plan and the City Transportation Analysis Guidelines. The following describes the significance criteria used to identify impacts on the transportation for the proposed Project.

6.2.1. VMT

City of Elk Grove, as a part of the 2023 General Plan update, has developed a City of Elk Grove travel demand model (EGSIM20). EGSIM20 is a modified version of the latest ABM developed by Sacramento Area Council of Governments (SACOG) known as SACSIM19. With the development of EGSIM20 and associated calibration and revalidation, the VMT performance measures were re-estimated to provide a consistent basis of evaluating the Project, a key requirement of SB 743, to ensure that the effects of the Project are accurately identified.

Land Use Limits – Sum of all vehicle miles traveled produced by uses in the applicable land use designation, divided by the sum of total employees working within the assessed area and dwelling units in the assessed area. An impact on VMT would be significant if implementation of the Project would result in an exceedance of the VMT limits of the Project's following General Plan land use designations, which incorporate a 15 percent reduction for existing (i.e., 2020) condition:

Low Density Residential – 19.3 daily VMT per service population

Study Area Limits – Sum of all daily vehicle miles traveled produced by all uses within the City or applicable Study Area. An impact on VMT would be significant if implementation of the Project would result in an exceedance of the established 8,066,247 total daily VMT within the City Limits.

6.2.2. Bicycle Facilities

An impact would be significant if implementation of the Project would:

- Disrupt existing or planned bicycle facilities or conflicts with adopted City non-auto plans, guidelines, policies, or standards.
- Add trips to an existing transportation facility or service (e.g., bike path) that does not meet current design standards.
- Degrade the Bicycle Streetscore LTS.

6.2.3. Pedestrian Facilities

An impact would be significant if implementation of the Project would:

- Fail to provide accessible and safe pedestrian connections between buildings and adjacent streets and transit facilities.
- Disrupt existing or planned bicycle facilities or conflicts with adopted City non-auto plans, guidelines, policies, or standards.
- Add trips to an existing transportation facility or service (e.g., sidewalk) that does not meet current design standards.
- Degrade the Pedestrian Streetscore LTS.

6.2.4. Transit service and facilities

An impact would be significant if implementation of the Project would:

- Create demand for public transit service above the crush load capacity that is provided or planned.
- Disrupt existing or planned transit facilities and services or conflicts with adopted City non-auto plans, guidelines, policies, or standards.

6.2.5. Transportation Hazards Related to Geometric Design Feature or Incompatible Uses

An impact would be significant if implementation of the Project would:

Result in designs for on-site circulation, access, and parking areas that fail to meet City or industry standard design guidelines.

6.2.6. Emergency Access

An impact would be significant if implementation of the Project would:

Result in inadequate emergency access.

6.3. Project Specific Impacts

6.3.1. Impact 1: VMT – Land Use Limits

The Project's VMT performance was analyzed in a comprehensive manner that considered its relative VMT efficiency per service population. **Table 10** shows VMT per service population for the low-density residential Project, which exceeds the VMT limit by 7.3 percent.

Therefore, the Project's residential land use VMT performance would be considered **significant**.

6.3.2. Impact 2: VMT – Study Area Limits

Table 11 shows the total daily VMT generated by the City of Elk Grove with the Project exceeds the General Plan Buildout VMT limit by 0.07 percent.

Therefore, the Project's Study Area VMT performance would be considered **significant**.

Mitigation Measures 1 & 2: VMT Reduction Strategies

The Project applicant shall implement VMT reduction strategies to reduce the VMT per service population of the Project's residential land use components.

The City of Elk Grove Transportation Analysis Guidelines identifies the following five categories of VMT reductions:

- Category A – Land Use/Location
- Category B – Site Enhancement
- Category C – Transit System Improvements
- Category D – Commute Trip Reductions
- Category E – In-Lieu Fee

CATEGORY A: LAND USE/LOCATION

Increase Residential Density (CAPCOA Handbook Strategy T-1) – This measure accounts for the VMT reduction achieved by a Project that is designed with a higher density of dwelling units compared to the average residential density in the United States (9.1 dwelling units/acre). Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing residential density results in shorter and fewer trips by single-occupancy vehicles. This measure is best quantified when applied to larger developments and developments where the

density is somewhat similar to the surrounding area due to the underlying research being founded in data from the neighborhood level.

The proposed Project will have a density of approximately 7 dwelling units per acre (du/ac). By increasing the density by 1 du/ac, a reduction of approximately 3.14% in residential VMT can be achieved, up to a maximum reduction of 30%. However, if the density exceeds 7 du/ac, the Project will no longer qualify as a Low-Density Residential development. Consequently, the VMT per capita limit would then be compared against the VMT per capita limit for Medium-Density Residential developments, which is 17.9.

CATEGORY B: SITE ENHANCEMENT

Provide pedestrian network improvement (CAPCOA Handbook Strategy T-18) – This measure will increase the sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. This mode shift results in a reduction in VMT and GHG emissions. The 'study area' should be based on a 1 KM buffer around the area where the pedestrian network is being improved. The VMT reduction is limited to household VMT.

There are approximately 9.6 miles of sidewalk within 1km buffer around the project. By adding 1 mile of sidewalk along the project frontage, the project can achieve up to 0.5% VMT reduction. However, because there are few destinations within walking distance of the project, the actual VMT reduction is uncertain and could be lower than the estimated 0.5%.

Construct or improve bike facility (CAPCOA Handbook Strategy T-19-A) – This measure would construct or improve a single bicycle facility that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area. This encourages a mode shift on the roadway parallel to the bicycle facility from vehicles to bicycles, displacing VMT.

A maximum of 0.06% reduction of VMT can be achieved in the Project location by adding more than 2 miles of Class I or Class IV bike facility.

CATEGORY C – TRANSIT SYSTEM IMPROVEMENTS

Extend transit network coverage or hours (CAPCOA Handbook Strategy T-25) – This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the Project site. Starting services earlier in the morning and/or extending services to late-night hours can accommodate the commuting times of alternative-shift workers. This will encourage the use of transit and therefore reduce VMT and associated GHG emissions.

The Project shall coordinate with the City of Elk Grove and fund a Communities Facilities District (CDF) to fund on-demand transit. This may include education services, improvement or extension of SmaRT ride zone, additional on-demand transit to specific locations such as Sutter Medical Plaza Elk Grove. The Project shall coordinate to fund and implement necessary improvements to transit stops amenities (i.e., shelters) near the Project to ensure that they are adequate to accommodate new transit riders generated by the Project. 0.12% reduction for every 10% increase Total transit service miles or service hours in plan/community area.

CATEGORY D – COMMUTE TRIP REDUCTIONS

Community-based travel planning (CAPCOA Handbook Strategy T-23) – This measure will target residences in the plan/community with community-based travel planning (CBTP). CBTP is a residential-based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles, thereby reducing household VMT and associated GHG emissions.

The Project shall fund a CDF that will provide community-based travel planning and assistance. 0.23% reduction for every 10% increase in Residences in plan/community targeted with CBTP.

CATEGORY E – IN-LIEU FEE

Create Communities Facilities District (CDF) – A CFD is a Special Tax District provided in State Law that funds the installation of public improvements or ongoing services within an identified area. A special tax is levied on taxable property within the district boundaries. Revenue received from the special tax is used to fund the CFD's authorized public facilities and or services. Creating a CFD can help fund ongoing transportation needs such as on-demand transit services, educational services, operation and maintenance of active transportation facilities. CFD will help reduce VMT by providing community-based travel planning and on-demand transit services.

IMPACT AFTER MITIGATION

The Project shall coordinate with the City of Elk Grove to ensure successful implementation of all reasonable mitigation measures that reduce the Project's VMT below the limit. However, existing evidence indicates that the effectiveness of TDM strategies with regards to vehicle trip reduction can vary based on a variety of factors, including the context of the surrounding built environment (e.g., urban versus suburban) and the aggregate effect of multiple TDM strategies deployed together. Moreover, many TDM strategies are not just site specific, but also rely on implementation and/or adoption by private entities (e.g., elective use of carpool program by residents) and other agencies (e.g., transit service operators).

Due to uncertainties regarding the ability for the aforementioned mitigation measure to reduce VMT impacts to less-than-significant levels, VMT impacts would be considered **significant and unavoidable**.

6.3.3. Impact 3: Bicycle Facilities

The internal Project roadways have bicycle infrastructure that will comply with the standard within City's Improvement standards, 2024 and will ensure adequate and safe access for bikes within the Project site. However, the Project does not propose building any off-site bicycle facility. The *City of Elk Grove Bicycle, Pedestrian, & Trails Master Plan*, May 2021 proposes planned improvements along Waterman Road but does not plan to build bicycle facility on Project frontage along Sheldon Road. The Project will add bicycle trips to existing roadways that do have bicycle facilities.

Therefore, the impact would be **significant**.

Mitigation Measure 3: Provide Bicycle Facilities

The Project shall build Class II bicycle facilities or Class I multi-use path along the Project frontage on Sheldon Road between Waterman Road and Bradshaw Road. A nexus study may be required to complete gaps in the bicycle system demand that the Project creates by adding people in the Project area. This could be addressed through the City's impact fee program or, alternatively, through a standalone in-lieu fee analysis to determine the project's responsibility for funding system improvements in the surrounding area.

Impact After Mitigation

Impact of the proposed Project on bicycle facility is considered **less than significant with mitigation**.

6.3.4. Impact 4: Pedestrian Facilities

The internal Project roadways have pedestrian infrastructure that will comply with the standard within City's Improvement standards, 2024 and will ensure adequate and safe access for pedestrians within the Project site. However, the Project does not propose building any off-site pedestrian facility. The *City of Elk Grove Bicycle, Pedestrian, & Trails Master Plan*, May 2021 also proposes Class I multi-use path along Waterman Road but does not plan to build any sidewalks on Project frontage. The Project fails to provide accessible and safe pedestrian connections between buildings and adjacent streets and transit facilities. It will also add pedestrian trips to existing roadways that do not have sidewalks.

The Project's impact on pedestrian facilities would be **significant**.

Mitigation Measure 4: Provide Pedestrian Facilities

The Project shall construct Class I multi-use path along the Project frontage on Sheldon Road between Waterman Road and Bradshaw Road. The Project shall also contribute to the planned development of the Class I multi-use path along Waterman Road between Bond Road and Calvine Road and along Sheldon Road between Elk Grove Florin and Waterman Road. A nexus study may be required to complete gaps in the bicycle system demand that the Project creates by adding people in the Project area. This could be addressed through the City's impact fee program or, alternatively, through a standalone in-lieu fee analysis to determine the project's responsibility for funding system improvements in the surrounding area.

Impact After Mitigation

Impact of the proposed Project on pedestrian facility is considered **less than significant with mitigation**.

6.3.5. Impact 5: Transit Facilities and Services

The Project location is not served by existing transit service within ½ a mile. Although the SacRT provide SmaRT Ride in the Project area, the service may not be adequate. The Project description does not include any additional transit services. As part of the mitigation measures for VMT, the Project shall coordinate with the City of Elk Grove e-tran or create CFDs to fund on-demand transit. This may include education services, improvement or extension of SmaRT ride zone, additional on-

demand transit to specific locations such as Sutter Medical Plaza Elk Grove. The Project shall use the CFDs to fund and implement necessary improvements to transit stops amenities (i.e., shelters) near the Project to ensure that they are adequate to accommodate new transit riders generated by the Project.

The demand for public transit services will not result in an increase in ridership above the crush load capacity of the transit system. The Project's impact on transit facilities and services would be considered **less than significant**. No Mitigation is required.

6.3.6. Impact 6: Transportation Hazards Related to Geometric Design Feature or Incompatible Uses

The proposed Project would only build new roadways that are internal to the Project and provide connections to Sheldon Road and Waterman Road. The City's improvement standards and design criteria to ensure that residential subdivisions and non-subdivision public right-of-way and private street improvements are designed to meet or exceed uniform levels of sound engineering practice. The design criteria address speed, sight distance, minimum and maximum roadway grade, minimum curve radius, and lighting. As part of general engineering practice, all roadway facilities would also be designed to meet applicable industry standards from the Caltrans Highway Design Manual (HDM), the California Manual on Uniform Traffic Control Devices (CAMUTCD), and The American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets. Each development application would be subject to review and approval by the City, including the City's Fire Department, which would include a review of the Project's consistency with the City's design criteria to ensure safe vehicle access is provided, including for emergency vehicles.

The Project description does not provide details on types of intersection control at the proposed gated entries. The Project access points shall be analyzed to include appropriate intersection control to minimize conflicting movements and discourage unsafe maneuver. Appropriate site distance and storage capacity shall be provided at intersections. The distance of entries from the major intersection of Sheldon Road and Waterman Road shall also be analyzed for safe queuing and sight distance. The Project shall work with the city of Elk Grove to finalize geometric design at intersections in accordance with the City guidelines. Implementation of the proposed Project would not substantially increase hazards due to design features or incompatible uses. Therefore, **no impact** is identified.

6.3.7. Impact 7: Emergency Access

The proposed Project would include three gated entries at Sheldon Road and one on Waterman Road. These routes will serve as primary emergency access routes.

The Cosumnes Community Services District operates the Cosumnes Fire Department (CFD), which provides fire and emergency medical service to the City of Elk Grove. The Cosumnes Fire Department maintains minimum requirements for emergency access, which include minimum roadway width and turning radius for fire apparatus. All internal roadways would be designed to meet these standards. Each subdivision and building permit application would be subject to review and approval by the City, including CFD to ensure specific roadway design and access standards are met. The CFD will review the Project's proposed circulation plan to ensure adequate access is provided

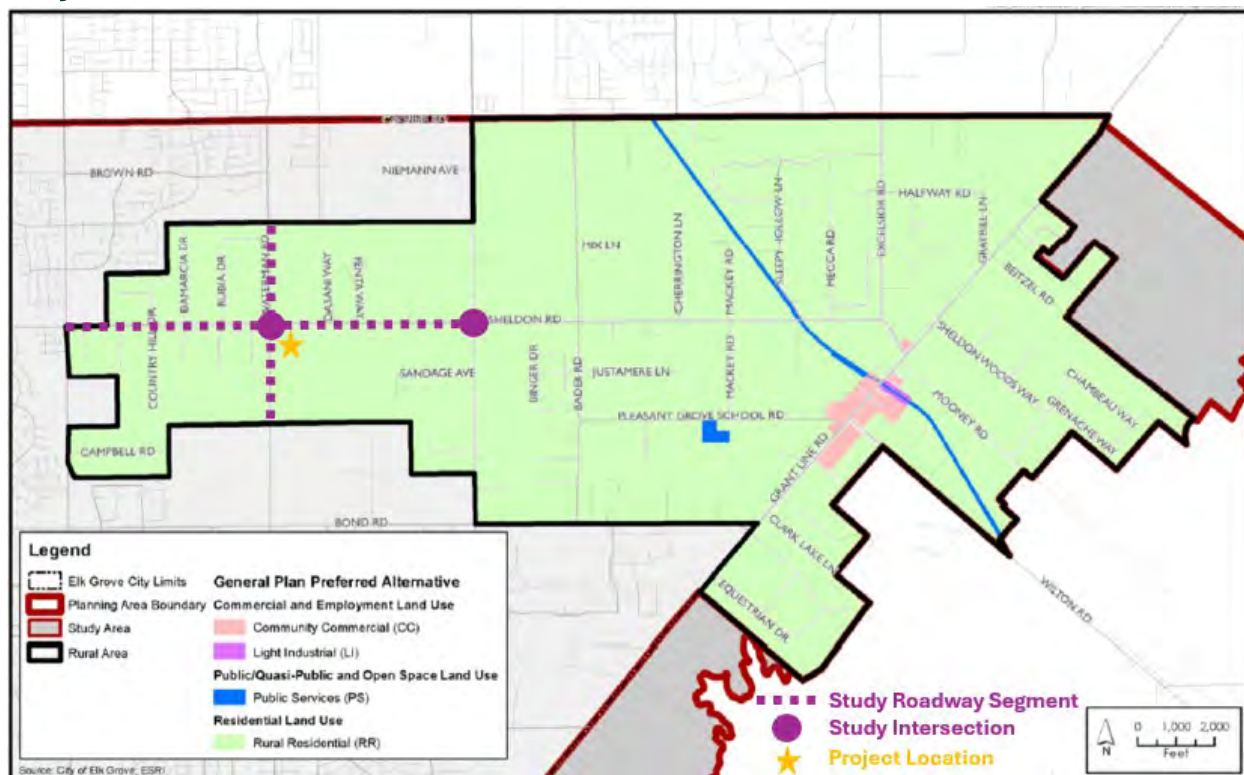
throughout the entire plan area. The proposed Project will participate in fee programs that fund the provision of fire and emergency medical services to ensure adequate staffing and equipment. The closest CFD fire stations are Station 73 and Station 76 and are about 1.5 miles from the Project site.

Implementation of the proposed Project would not result in inadequate emergency access. Therefore, the Project's impact on emergency services is considered **less than significant**. No Mitigation is required.

7. General Plan Consistency

This chapter summarizes the transportation improvements that are necessary to be consistent with the City of Elk Grove General Plan with special emphasis placed on facilities located in the City of Elk Grove's Rural Area, which is shown in **Figure 13**.

Figure 13: Elk Grove Rural Area



The City's Rural Road Policy (RRP), adopted in 2007 (Amended in 2019) implements the General Plan goals, policies, and actions. Specifically, this policy implements the provisions of the Land Use and Circulation Elements regarding the preservation and maintenance of features that contribute to the rural residential character, including small local roadways with minimum paving, natural landscape, and preservation of existing mature trees. The Rural Road Improvement Policy applies to the area defined in the General Plan as the Rural Area Community Plan. Since the Project site and several study roadways/intersections are located within the areas designated under the General Plan as the Rural Area Community, the Rural Road Policy (RRP) applies.

The RRP establishes a value-based approach for incremental (rather than ultimate) road improvements. As shown in **Figure 13**, the Project is in the City of Elk Grove Rural Area and the following study facilities (highlighted in **Figure 13**) are subject to the Rural Road Improvement Policy:

Roadway Segments

Sheldon Road – Elk Grove Florin Road to Waterman Road
Sheldon Road – Waterman Road to Bradshaw Road
Waterman Road – North of Sheldon Road (Half Mile)
Waterman Road – South of Sheldon Road (Half Mile)

Intersections

Sheldon Road/Waterman Road
Sheldon Road/Bradshaw Road

The Rural Road Policy emphasizes adding capacity to intersections to postpone the need for widening complete segments of roadways.

Table 18: Intersection Improvement Steps – Daily Volume Thresholds

Improvement Step	Configuration	Daily Volume Thresholds
1	All-way stop control	≤8,000
2	Traffic signal control Separate left turn lanes or single-lane roundabout	8,000 – 15,000
3	Traffic signal control Separate left turn lanes Separate right turn lanes or single-lane roundabout	15,001 – 18,000
4	Traffic signal control Separate left turn lanes Separate right turn lanes and two through lanes	18,001 – 24,000
5	Widen roadway segment from 2 lanes to 4 lanes	24,001 – 36,000
6	Widen roadway segment from 4 lanes to 6 lanes	>36,000

Elk Grove Rural Road Policy, adopted in 2007 (Amended in 2019)
Source: Fehr & Peers, 2025

As shown in **Table 18**, the improvement transition from Step 3 to Step 4 (i.e., a daily volume > 18,000 vehicles) would require the addition of through lanes through a subject intersection to add capacity prior to Step 5, which triggered widening the roadway segment (i.e., a daily volume > 24,000 vehicles). Consequently, if a single lane roundabout was implemented at Step 3, it would be replaced with traffic signal control with Step 4 because two-lane roundabout applications were not desired at the time the RRP was developed. However, since then, the city has successfully implemented two-lane roundabout configurations, including at the Bradshaw Road/Sheldon Road intersection.

Therefore, 2-lane roundabouts are now considered an acceptable improvement with Step 4, since they can be implemented to defer roadway segment widening are considered below.

While the RRP was developed and intended to manage the implementation of capital improvement projects, it may apply to the review of development projects. To maintain consistency with the RRP, improvements identified to maintain consistency with the General Plan design targets for roadways and intersections should only be implemented when traffic volume monitoring indicates that the roadway segment volumes are exceeded. They should not be implemented based purely on a forecast of future travel conditions. Consequently, conditions placed on the Project should include fee payment for ongoing volume monitoring on Sheldon Road and Waterman Road and as appropriate fee payment for the Project's proportional share of needed improvements, which may be satisfied through payment of the City of Elk Grove Roadway Impact Fees or other proportional exaction.

Based on the existing daily traffic volumes shown in **Table 15**, the current traffic volumes do not satisfy the thresholds for widening the segments of Sheldon Road and Waterman Road in the Rural Area. At present, the measured volumes fall within Step 2 in **Table 18**. Step 3, which includes the addition of right-turn improvements, would be satisfied when the daily roadway segment volume exceeds 15,000 vehicles per day.

As shown in **Table 15**, the daily traffic volumes on the rural segments of Sheldon Road and Waterman Road would satisfy Step 3 (i.e., on Sheldon Road) and Step 4 (i.e., on Waterman Road) under General Plan Buildout conditions. These segments would also exceed their roadway design target, which would indicate the need to widen the segments from two to four lanes to maintain the roadway performance specified in General Plan Policy MOB-1-3. However, recognizing the unique context of the rural community, the General Plan also includes the following policy specific to mobility improvements in the Sheldon/Rural Area:

Policy RA-3-1: make context-sensitive design improvements to roadways in the Rural Area, when warranted, consistent with the Rural Road Improvement Policy and consistent with the intent of the Complete Streets Act.

Policy RA-3-3: Support improvements necessary to ensure safe, efficient, and improved access for mobility in the Rural Area consistent with the Rural Road Improvement Policy.

Therefore, when evaluating the effectiveness of infrastructure improvements, it is important to consider operations at the intersections along study segments, since intersections are the locations in the system where drivers typically experience poor operations characterized by long delays and queuing. As shown in **Table 20**, implementing the improvements at the Waterman Road/Sheldon Road intersection (see **Table 19**), which are consistent with the Rural Road Improvement Policy (discussed above), would result in delay below the performance delay target. In addition, the Elk Grove Florin Road/Sheldon Road and Waterman Road/Bond Road intersections, which are the other intersections at the end of the deficient roadway segments, would also operate below the performance delay targets. Therefore, implementing the recommended improvements would result in acceptable operations of the intersections in the system and would be consistent with the implementation steps of the Rural Road Improvement Policy. Consequently, widening the roadways

from two to four lanes, which would be a logical improvement based on General Plan Policy MOB-1-3 (Table 6-4), is not recommended in the rural context.

The Project is responsible for its proportional fair share towards implementing these improvements, which could be achieved through payment of the City's Roadway Impact Fees or other proportional exaction. **Table 20** summarizes the change in delays with improvement recommendations.

Appendix C includes delay reports for intersections with improvements.

Table 19: Improvement Recommendations

Location		Impacted Scenarios	Located in Rural Area?	Improvement Recommendation
Roadways	Sheldon Rd from Elk Grove Florin Rd to Waterman Rd	C+P	Yes	Consistent with the RRP, the roadway segment is within the range of improvement Step 3. However, the roadway segment impact is considered within the General Plan environmental impact report (EIR). So, the City may also consider allowing a deviation to the roadway design target, as provided in Policy MOB-1-3.
	Waterman Rd from Sheldon Rd to Bond Rd	CNP, C+P	Yes	The roadway segment impact is considered within the General Plan environmental impact report (EIR). So, the City may also consider allowing a deviation to the roadway design target, as provided in Policy MOB-1-3. In addition, with each tentative map that access Waterman Road, the applicant shall evaluate the need for a right-turn lane pocket, consistent with City's Improvement standards, 2024.
Intersections	Waterman Rd/Sheldon Rd	E+P E+AP+P, CNP, C+P	Yes	The intersection exceeds the design target under project conditions. For E+P and E+AP+P scenarios, additional capacity is required on the east leg of the roundabout. Consistent with the RRP, adding a 200 ft right turn lane will improve operations and the delay will be within performance target. This intersection exceeds the design target for both CNP and C+P scenarios. Additional capacity is required for the intersection. Reconfiguring the roundabout to a two-lane circulatory design and widening all four approaches to accommodate an additional lane for all movements at the intersection. Widening will be limited to the intersection only, with the two lanes transition to one lane after the intersection.
	Waterman Rd/Calvine Rd	ENP, E+P E+AP, E+AP+P, CNP, C+P	No	The intersection exceeds the intersection design target under existing, near-term, and cumulative conditions with and without the project. Since the Project worsens unacceptable delay conditions, the Project is responsible for its proportional fair share towards implementing the City's standard expanded intersection configuration, which could be achieved through payment of the City's Development Impact Fees.
	Bradshaw Rd/Sheldon Rd	CNP, C+P	Yes	The intersection exceeds the design target under both CNP and CPP conditions. The addition of the Project increases the delay. Reconfigure the roundabout to two-lane circulatory design and widen east-west approaches to two lanes. This widening will be limited to the intersection only. The E/W lanes will be tapered off-on to one lane after the intersection.

Source: Fehr & Peers, 2025

Table 20: Intersection Delay – With Recommended Improvements

Intersection	Traffic Control	Performance Delay Target	Scenario	Delay		Delay with Improvement		Improvements
				AM	PM	AM	PM	
1: Waterman Road/Sheldon Road	Roundabout	< 35.1	E+P	38	20	29	18	Reconfigure the roundabout to add a right turn pocket at the east leg of the roundabout.
			E+AP+P	40	21	29	19	
			CNP	97	64	24	20	Reconfigure the roundabout to a two-lane circulatory design and widen all four approaches to accommodate an additional lane for all movements at the intersection. Widening will be limited to the intersection only, with the two lanes tapering off into one lane.
			CPP	134	80	31	33	
5: Bradshaw Road/Sheldon Road	Roundabout	< 35.1	CNP	66	103	28	41	Reconfigure the roundabout to two-lane circulatory design and widen east-west approaches to two lanes. This widening will be limited to the intersection only. The E/W lanes will be tapered off-onto one lane after the intersection.
			CPP	70	108	29	43	

Notes:

Delay in **Bold** indicates delays that exceed performance targets.

Delays are rounded to the nearest whole number.

Source: Fehr & Peers, 2025

8. Project Site review

A “program-level” site plan review was conducted using the City of Elk Grove Improvement Standards, 2024. Findings and recommendations are listed below:

The proposed site accesses should be aligned with any existing access/street or future development site accesses on the other side of Sheldon Road and Waterman Road. **Figure 14** identifies the access locations that may need to be realigned.

Sheldon Road is heavily utilized during peak hours. Currently it is a two-lane roadway that has a posted speed of 40 mph. The Project is proposing an access 331 feet from the Sheldon Road/Waterman Road roundabout. The Project will add approximately 15 trips to that access during the AM peak hour and 18 trips during the PM peak. The numbers may vary depending on the lot allocation and final site plan. Although the number of trips would likely not cause queuing issues, if the westbound queues on Sheldon Road extend beyond the 331-foot storage, there may be access, operations, and safety issues. It is recommended that the Project remove the westernmost access from Sheldon Road and add an additional access to Waterman Road. To avoid similar conflicts, the driveway should be at least 600 feet south of the intersection to avoid any future queuing. It should also be aligned with any existing or planned access on the opposite side on Waterman Road. **Figure 14** identifies the potential location for the access roads.

A two-way left-turn lane should be added on Sheldon Road along the eastern side of the Project frontage to improve operations and enhance safety. This would ensure improved traffic flow when entering and exiting the Project site, especially when the development to the north is built.

The two proposed Project access on the east side of the Project frontage are approximately 550 ft apart. When realigned, they will be 538 ft apart. This is greater than the city’s minimum spacing requirements.

The internal bridge connecting the east and west sides of the Project should be designed and constructed to accommodate autos, bikes, and pedestrians.

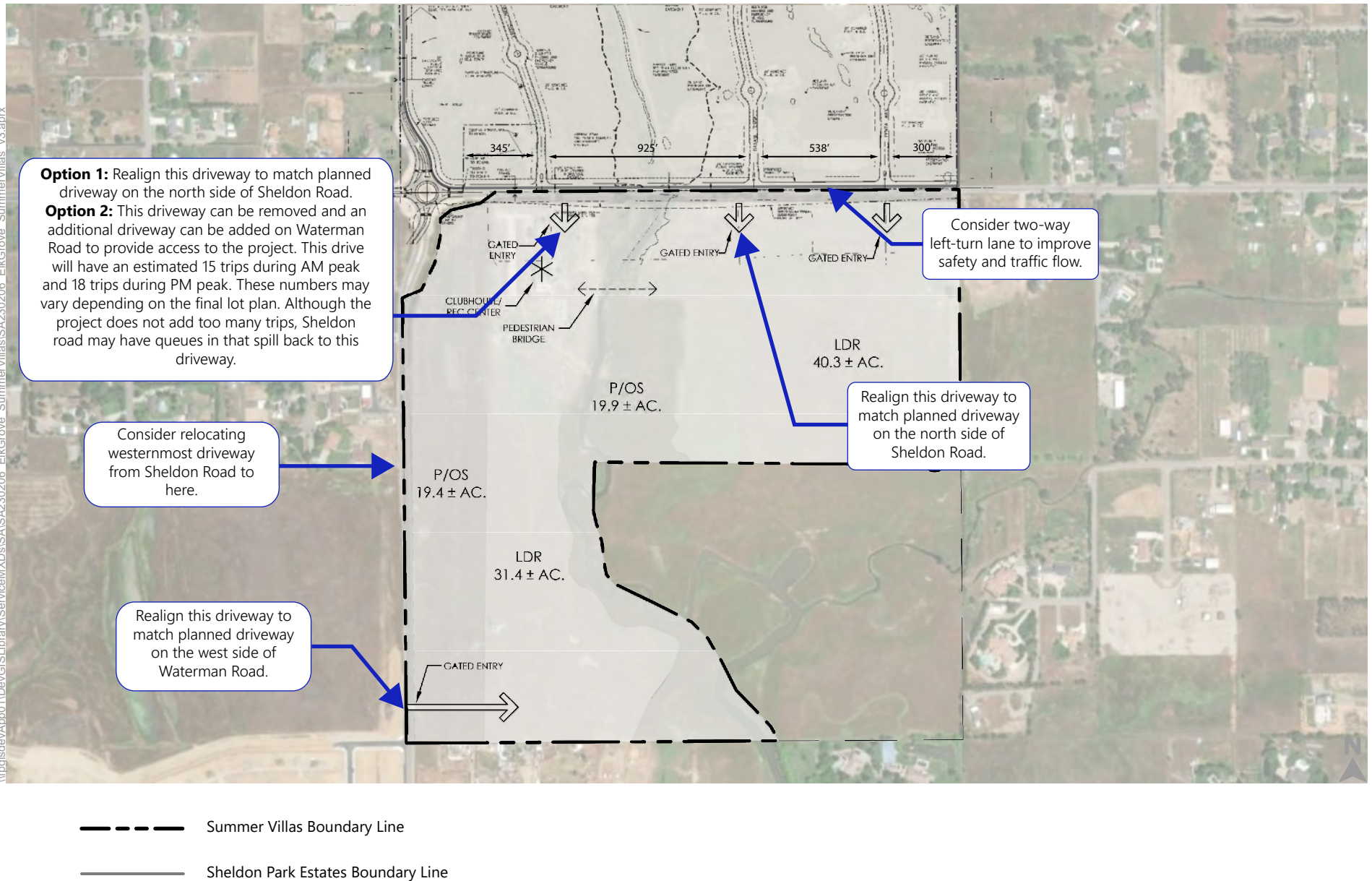


Figure 14



Appendix A

Count Sheets

Fehr&Peers

National Data & Surveying Services

Intersection Turning Movement Count

Location: Waterman Rd & Sheldon Rd

City: Elk Grove

Control: 4-Way Yield

Project ID: 24-070131-001

Date: 8/20/2024

Data - Total

NS/EW Streets:	Waterman Rd				Waterman Rd				Sheldon Rd				Sheldon Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0.5	0.5	1	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	58	21	0	2	46	13	0	12	70	20	0	14	68	2	0	341
7:15 AM	28	85	50	0	5	58	17	0	23	98	22	0	33	68	6	0	493
7:30 AM	41	99	43	0	7	104	28	0	44	72	16	0	40	79	3	0	576
7:45 AM	35	96	36	0	5	109	39	0	46	99	42	0	48	109	1	0	665
8:00 AM	49	79	36	0	12	129	57	0	27	67	52	0	40	109	12	0	669
8:15 AM	74	75	38	0	7	97	70	0	17	48	37	0	31	128	6	0	628
8:30 AM	52	67	36	0	4	81	60	0	16	66	29	0	30	105	3	0	549
8:45 AM	29	48	29	0	4	56	28	0	14	55	21	1	27	91	5	0	408
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	323	607	289	0	46	680	312	0	199	575	239	1	263	757	38	0	4329
	26.50%	49.79%	23.71%	0.00%	4.43%	65.51%	30.06%	0.00%	19.63%	56.71%	23.57%	0.10%	24.86%	71.55%	3.59%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	199	349	153	0	31	439	194	0	134	286	147	0	159	425	22	0	2538
PEAK HR FACTOR :	0.672	0.881	0.890	0.000	0.646	0.851	0.693	0.000	0.728	0.722	0.707	0.000	0.828	0.830	0.458	0.000	0.948
	0.937				0.838				0.758				0.918				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0.5	0.5	1	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	46	103	36	0	6	106	65	0	32	73	28	0	43	106	4	0	648
4:15 PM	27	54	37	2	5	83	47	0	27	98	34	0	50	114	8	0	586
4:30 PM	22	78	29	0	6	95	50	0	30	67	38	0	48	119	4	0	586
4:45 PM	28	86	38	0	8	111	48	0	29	60	49	0	44	97	2	0	600
5:00 PM	38	90	50	0	3	103	45	0	28	80	35	1	34	118	1	0	626
5:15 PM	21	71	31	0	4	86	35	0	32	67	34	0	37	112	5	0	535
5:30 PM	32	80	25	0	5	111	40	0	30	70	52	0	44	115	5	0	609
5:45 PM	39	83	34	0	4	76	25	0	23	73	45	0	46	94	2	0	544
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	253	645	280	2	41	771	355	0	231	588	315	1	346	875	31	0	4734
	21.44%	54.66%	23.73%	0.17%	3.51%	66.07%	30.42%	0.00%	20.35%	51.81%	27.75%	0.09%	27.64%	69.89%	2.48%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	123	321	140	2	25	395	210	0	118	298	149	0	185	436	18	0	2420
PEAK HR FACTOR :	0.668	0.779	0.921	0.250	0.781	0.890	0.808	0.000	0.922	0.760	0.760	0.000	0.925	0.916	0.563	0.000	0.934
	0.792				0.890				0.888				0.929				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Waterman Rd & Calvine Rd

City: Elk Grove

Control: Signalized

Project ID: 24-070131-002

Date: 8/20/2024

Data - Total

NS/EW Streets:	Waterman Rd				Waterman Rd				Calvine Rd				Calvine Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	1 ST	0 SR	0 SU	1 EL	2 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	18	24	24	0	3	30	47	0	17	141	10	0	16	142	2	0	474
7:15 AM	27	39	43	0	4	52	43	0	30	154	19	0	25	128	3	0	567
7:30 AM	34	36	59	0	6	63	41	0	49	245	21	1	48	214	4	0	821
7:45 AM	19	26	92	0	19	85	55	0	78	278	49	0	67	235	9	0	1012
8:00 AM	25	26	73	0	27	63	57	0	50	212	55	0	74	280	9	2	953
8:15 AM	26	44	44	0	16	48	61	0	56	222	39	2	81	286	14	1	940
8:30 AM	35	38	30	0	7	38	53	0	14	87	22	2	76	254	4	0	660
8:45 AM	25	30	23	0	3	32	31	0	16	114	13	1	27	117	4	0	436
TOTAL VOLUMES :	NL 209	NT 263	NR 388	NU 0	SL 85	ST 411	SR 388	SU 0	EL 310	ET 1453	ER 228	EU 6	WL 414	WT 1656	WR 49	WU 3	TOTAL 5863
APPROACH %'s :	24.30%	30.58%	45.12%	0.00%	9.62%	46.49%	43.89%	0.00%	15.52%	72.76%	11.42%	0.30%	19.51%	78.04%	2.31%	0.14%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	104	132	268	0	68	259	214	0	233	957	164	3	270	1015	36	3	3726
PEAK HR FACTOR :	0.765	0.750	0.728	0.000	0.630	0.762	0.877	0.000	0.747	0.861	0.745	0.375	0.833	0.887	0.643	0.375	0.920
	0.920				0.851				0.838				0.866				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	1 SL	1 ST	0 SR	0 SU	1 EL	2 ET	1 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	27	72	42	0	6	57	69	0	56	181	50	1	74	238	9	0	882
4:15 PM	26	45	27	0	7	49	36	0	36	153	33	1	55	189	8	0	665
4:30 PM	33	45	32	0	4	40	29	0	53	191	45	0	77	179	6	0	734
4:45 PM	26	45	41	0	8	34	37	0	48	177	54	1	69	194	7	0	741
5:00 PM	26	39	32	0	8	58	31	0	55	170	44	0	57	179	1	0	700
5:15 PM	36	57	36	0	5	43	42	0	49	184	35	0	41	208	8	0	744
5:30 PM	26	52	37	0	7	55	38	0	67	152	50	2	46	211	5	0	748
5:45 PM	27	51	34	0	6	35	30	0	44	173	35	0	33	208	4	0	680
TOTAL VOLUMES :	NL 227	NT 406	NR 281	NU 0	SL 51	ST 371	SR 312	SU 0	EL 408	ET 1381	ER 346	EU 5	WL 452	WT 1606	WR 48	WU 0	TOTAL 5894
APPROACH %'s :	24.84%	44.42%	30.74%	0.00%	6.95%	50.54%	42.51%	0.00%	19.07%	64.53%	16.17%	0.23%	21.46%	76.26%	2.28%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	112	207	142	0	25	180	171	0	193	702	182	3	275	800	30	0	3022
PEAK HR FACTOR :	0.848	0.719	0.845	0.000	0.781	0.789	0.620	0.000	0.862	0.919	0.843	0.750	0.893	0.840	0.833	0.000	0.857
	0.817				0.712				0.934				0.861				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Waterman Rd & Bond Rd

City: Elk Grove

Control: Signalized

Project ID: 24-070131-003

Date: 8/20/2024

Data - Total

NS/EW Streets:	Waterman Rd				Waterman Rd				Bond Rd				Bond Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	1 NR	0 NU	2 SL	2 ST	1 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU	
7:00 AM	23	45	5	0	15	39	28	2	31	70	20	0	7	98	17	0	400
7:15 AM	23	84	5	1	19	46	38	0	59	89	23	1	7	123	28	0	546
7:30 AM	59	83	12	0	20	65	68	1	63	104	20	2	12	149	32	0	690
7:45 AM	123	74	15	0	41	81	65	2	56	127	35	2	10	154	33	0	818
8:00 AM	166	62	18	0	89	89	52	0	52	142	102	2	13	154	58	0	999
8:15 AM	54	60	6	0	42	100	30	1	52	103	150	4	19	153	78	0	852
8:30 AM	38	43	10	1	15	83	37	1	55	80	35	2	21	152	51	0	624
8:45 AM	28	44	11	0	8	66	40	4	26	57	23	2	13	117	20	0	459
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	514	495	82	2	249	569	358	11	394	772	408	15	102	1100	317	0	5388
PEAK HR :	47.03%	45.29%	7.50%	0.18%	20.98%	47.94%	30.16%	0.93%	24.80%	48.58%	25.68%	0.94%	6.71%	72.42%	20.87%	0.00%	
PEAK HR VOL :	07:30 AM - 08:30 AM				192	335	215	4	223	476	307	10	54	610	201	0	TOTAL
PEAK HR FACTOR :	402	279	51	0	0.539	0.838	0.790	0.500	0.885	0.838	0.512	0.625	0.711	0.990	0.644	0.000	3359
	0.744				0.811				0.822				0.865				0.841

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	1 NR	0 NU	2 SL	2 ST	1 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU	
4:00 PM	39	66	23	1	33	82	59	5	35	130	47	1	22	149	55	0	747
4:15 PM	48	72	21	0	35	81	58	0	37	120	48	1	22	152	21	0	716
4:30 PM	37	79	20	0	35	89	62	3	39	137	66	2	17	104	14	0	704
4:45 PM	39	65	15	1	39	101	62	1	56	126	64	2	21	104	14	0	710
5:00 PM	35	86	24	1	34	94	45	4	62	134	52	5	10	124	23	0	733
5:15 PM	42	75	24	2	25	86	39	3	35	143	68	2	12	150	14	0	720
5:30 PM	47	74	18	0	37	103	52	5	39	153	62	1	17	139	20	1	768
5:45 PM	41	61	17	0	19	106	51	3	51	133	53	0	21	147	39	0	742
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	328	578	162	5	257	742	428	24	354	1076	460	14	142	1069	200	1	5840
PEAK HR :	30.57%	53.87%	15.10%	0.47%	17.71%	51.14%	29.50%	1.65%	18.59%	56.51%	24.16%	0.74%	10.06%	75.71%	14.16%	0.07%	
PEAK HR VOL :	05:00 PM - 06:00 PM				115	389	187	15	187	563	235	8	60	560	96	1	TOTAL
PEAK HR FACTOR :	165	296	83	3	0.777	0.917	0.899	0.750	0.754	0.920	0.864	0.400	0.714	0.933	0.615	0.250	2963
	0.937				0.896				0.974				0.866				0.965

National Data & Surveying Services

Intersection Turning Movement Count

Location: Elk Grove Florin Rd & Sheldon Rd

City: Elk Grove

Control: Signalized

Project ID: 24-070131-004

Date: 8/20/2024

Data - Total

NS/EW Streets:	Elk Grove Florin Rd				Elk Grove Florin Rd				Sheldon Rd				Sheldon Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	0 NR	0 NU	2 SL	3 ST	1 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU	
7:00 AM	12	86	13	0	10	74	66	5	56	87	9	2	8	74	8	0	510
7:15 AM	15	134	25	0	16	110	72	10	66	101	15	0	15	93	11	0	683
7:30 AM	15	151	26	0	20	173	83	7	59	107	29	0	36	107	20	0	833
7:45 AM	16	141	21	0	28	199	112	11	108	111	43	2	47	115	29	0	983
8:00 AM	25	167	15	0	37	192	111	19	104	78	39	0	38	113	42	0	980
8:15 AM	28	161	26	0	22	162	110	23	127	80	29	0	55	161	54	0	1038
8:30 AM	27	185	15	0	20	215	121	6	69	69	20	1	53	147	27	0	975
8:45 AM	28	128	18	0	16	152	96	9	42	53	18	1	31	123	19	0	734
TOTAL VOLUMES :	NL 166	NT 1153	NR 159	NU 0	SL 169	ST 1277	SR 771	SU 90	EL 631	ET 686	ER 202	EU 6	WL 283	WT 933	WR 210	WU 0	TOTAL 6736
APPROACH %'s :	11.23%	78.01%	10.76%	0.00%	7.33%	55.35%	33.42%	3.90%	41.38%	44.98%	13.25%	0.39%	19.85%	65.43%	14.73%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	96	654	77	0	107	768	454	59	408	338	131	3	193	536	152	0	3976
PEAK HR FACTOR :	0.857	0.884	0.740	0.000	0.723	0.893	0.938	0.641	0.803	0.761	0.762	0.375	0.877	0.832	0.704	0.000	0.958
	0.911				0.959				0.833				0.816				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	2 NL	2 NT	0 NR	0 NU	2 SL	3 ST	1 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU	
4:00 PM	26	157	23	0	14	163	104	11	122	108	27	2	39	159	22	0	977
4:15 PM	38	206	38	0	34	225	116	14	84	100	33	0	32	134	19	0	1073
4:30 PM	22	148	24	1	27	199	107	12	111	105	34	1	38	132	11	0	972
4:45 PM	20	154	35	1	21	192	104	10	98	85	20	2	47	139	20	0	948
5:00 PM	28	158	29	0	21	182	121	23	97	98	23	1	34	144	24	0	983
5:15 PM	26	223	15	0	21	208	104	19	115	104	37	1	37	105	19	0	1034
5:30 PM	32	158	22	1	31	195	118	16	119	111	39	1	36	118	23	0	1020
5:45 PM	32	145	21	0	24	187	100	24	106	101	36	1	21	122	17	0	937
TOTAL VOLUMES :	NL 224	NT 1349	NR 207	NU 3	SL 193	ST 1551	SR 874	SU 129	EL 852	ET 812	ER 249	EU 9	WL 284	WT 1053	WR 155	WU 0	TOTAL 7944
APPROACH %'s :	12.56%	75.66%	11.61%	0.17%	7.03%	56.46%	31.82%	4.70%	44.33%	42.25%	12.96%	0.47%	19.03%	70.58%	10.39%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	106	693	101	2	94	777	447	68	429	398	119	5	154	506	86	0	3985
PEAK HR FACTOR :	0.828	0.777	0.721	0.500	0.758	0.934	0.924	0.739	0.901	0.896	0.763	0.625	0.819	0.878	0.896	0.000	0.963
	0.854				0.963				0.881				0.905				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Bradshaw Rd & Sheldon Rd

City: Elk Grove

Control: 4-Way Yield

Project ID: 24-070131-005

Date: 8/20/2024

Data - Total

NS/EW Streets:	Bradshaw Rd				Bradshaw Rd				Sheldon Rd				Sheldon Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	0.5 SL	1 ST	0.5 SR	0 SU	0.3 EL	0.3 ET	0.3 ER	0 EU	0.3 WL	0.3 WT	0.3 WR	0 WU	
7:00 AM	13	162	5	0	3	94	29	0	49	30	4	0	11	38	7	0	445
7:15 AM	9	202	21	0	5	124	55	0	95	36	11	0	28	45	6	1	638
7:30 AM	13	241	18	0	5	150	73	0	70	35	12	0	31	54	6	0	708
7:45 AM	11	239	28	0	10	235	83	2	76	38	20	0	52	55	5	0	854
8:00 AM	22	223	48	0	6	261	88	1	50	43	13	0	65	46	6	0	872
8:15 AM	20	219	62	0	4	200	81	1	72	45	9	0	32	52	6	0	803
8:30 AM	16	210	51	0	2	121	86	0	60	38	6	0	5	34	7	0	636
8:45 AM	12	99	7	0	6	93	49	0	36	53	6	0	5	40	3	0	409
TOTAL VOLUMES :	NL 116	NT 1595	NR 240	NU 0	SL 41	ST 1278	SR 544	SU 4	EL 508	ET 318	ER 81	EU 0	WL 229	WT 364	WR 46	WU 1	TOTAL 5365
APPROACH %'s :	5.95%	81.75%	12.30%	0.00%	2.20%	68.45%	29.14%	0.21%	56.01%	35.06%	8.93%	0.00%	35.78%	56.88%	7.19%	0.16%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	66	922	156	0	25	846	325	4	268	161	54	0	180	207	23	0	3237
PEAK HR FACTOR :	0.750	0.956	0.629	0.000	0.625	0.810	0.923	0.500	0.882	0.894	0.675	0.000	0.692	0.941	0.958	0.000	0.928
	0.950				0.843				0.901				0.876				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0.5 NL	1 NT	0.5 NR	0 NU	0.5 SL	1 ST	0.5 SR	0 SU	0.3 EL	0.3 ET	0.3 ER	0 EU	0.3 WL	0.3 WT	0.3 WR	0 WU	
4:00 PM	13	213	83	0	11	177	65	0	45	64	7	0	11	57	7	0	753
4:15 PM	7	136	28	0	4	200	96	1	42	85	6	0	13	47	6	0	671
4:30 PM	8	95	9	0	7	203	89	2	40	50	10	0	9	67	6	0	595
4:45 PM	6	122	10	0	9	185	91	0	39	55	15	0	22	46	7	0	607
5:00 PM	4	134	18	0	6	156	85	1	54	56	11	0	19	58	6	0	608
5:15 PM	15	134	14	0	2	177	100	2	32	45	10	0	25	47	3	0	606
5:30 PM	9	118	25	0	5	169	76	0	49	53	11	0	13	64	6	0	598
5:45 PM	3	101	18	0	3	206	83	0	49	49	10	0	16	47	8	0	593
TOTAL VOLUMES :	NL 65	NT 1053	NR 205	NU 0	SL 47	ST 1473	SR 685	SU 6	EL 350	ET 457	ER 80	EU 0	WL 128	WT 433	WR 49	WU 0	TOTAL 5031
APPROACH %'s :	4.91%	79.59%	15.50%	0.00%	2.13%	66.62%	30.98%	0.27%	39.46%	51.52%	9.02%	0.00%	20.98%	70.98%	8.03%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	34	566	130	0	31	765	341	3	166	254	38	0	55	217	26	0	2626
PEAK HR FACTOR :	0.654	0.664	0.392	0.000	0.705	0.942	0.888	0.375	0.922	0.747	0.633	0.000	0.625	0.810	0.929	0.000	0.872
	0.591				0.947				0.861				0.909				

Appendix B

Delay Reports

Fehr&Peers

MOVEMENT SUMMARY

 Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: ENP)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	209	2.0	209	2.0	0.633	11.3	LOS B	6.8	173.9	0.79	0.73	1.18	29.9
8	T1	All MCs	367	2.0	367	2.0	0.633	11.3	LOS B	6.8	173.9	0.79	0.73	1.18	30.5
18	R2	All MCs	161	2.0	161	2.0	0.633	11.3	LOS B	6.8	173.9	0.79	0.73	1.18	30.2
Approach			738	2.0	738	2.0	0.633	11.3	LOS B	6.8	173.9	0.79	0.73	1.18	30.2
East: Sheldon Road															
1	L2	All MCs	167	2.0	167	2.0	0.923	40.8	LOS E	16.0	407.0	1.00	1.56	2.88	21.6
6	T1	All MCs	447	2.0	447	2.0	0.923	40.8	LOS E	16.0	407.0	1.00	1.56	2.88	21.9
16	R2	All MCs	23	2.0	23	2.0	0.923	40.8	LOS E	16.0	407.0	1.00	1.56	2.88	21.8
Approach			638	2.0	638	2.0	0.923	40.8	LOS E	16.0	407.0	1.00	1.56	2.88	21.8
North: Waterman Road															
7	L2	All MCs	33	2.0	33	2.0	0.812	30.0	LOS D	7.9	201.2	0.92	1.19	1.95	24.3
4	T1	All MCs	462	2.0	462	2.0	0.812	30.0	LOS D	7.9	201.2	0.92	1.19	1.95	24.7
14	R2	All MCs	204	2.0	204	2.0	0.335	10.5	LOS B	1.4	36.0	0.68	0.67	0.77	30.9
Approach			699	2.0	699	2.0	0.812	24.3	LOS C	7.9	201.2	0.85	1.04	1.61	26.2
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.724	18.2	LOS C	7.7	194.3	0.90	1.01	1.62	27.5
2	T1	All MCs	301	2.0	301	2.0	0.724	18.2	LOS C	7.7	194.3	0.90	1.01	1.62	27.9
12	R2	All MCs	155	2.0	155	2.0	0.724	18.2	LOS C	7.7	194.3	0.90	1.01	1.62	27.7
Approach			597	2.0	597	2.0	0.724	18.2	LOS C	7.7	194.3	0.90	1.01	1.62	27.8
All Vehicles			2672	2.0	2672	2.0	0.923	23.3	LOS C	16.0	407.0	0.88	1.07	1.80	26.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\1_Existing\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	957	164	273	1015	36	104	132	268	68	259	214
Future Volume (veh/h)	236	957	164	273	1015	36	104	132	268	68	259	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	1040	65	297	1103	39	113	143	291	74	282	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1097	486	305	1156	41	122	165	335	94	272	224
Arrive On Green	0.15	0.31	0.31	0.17	0.33	0.33	0.07	0.30	0.30	0.05	0.29	0.29
Sat Flow, veh/h	1781	3554	1575	1781	3501	124	1781	543	1105	1781	946	782
Grp Volume(v), veh/h	257	1040	65	297	560	582	113	0	434	74	0	515
Grp Sat Flow(s),veh/h/ln	1781	1777	1575	1781	1777	1848	1781	0	1648	1781	0	1728
Q Serve(g_s), s	18.0	35.9	3.7	20.8	38.6	38.7	7.9	0.0	31.2	5.1	0.0	36.0
Cycle Q Clear(g_c), s	18.0	35.9	3.7	20.8	38.6	38.7	7.9	0.0	31.2	5.1	0.0	36.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.67	1.00		0.45
Lane Grp Cap(c), veh/h	268	1097	486	305	587	610	122	0	499	94	0	496
V/C Ratio(X)	0.96	0.95	0.13	0.97	0.95	0.95	0.92	0.00	0.87	0.79	0.00	1.04
Avail Cap(c_a), veh/h	268	1097	486	305	587	610	122	0	499	121	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	42.4	31.3	51.7	41.1	41.1	58.1	0.0	41.4	58.7	0.0	44.7
Incr Delay (d2), s/veh	42.9	17.3	0.6	43.7	27.4	26.8	57.8	0.0	14.6	17.4	0.0	50.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	17.7	1.5	12.7	20.6	21.4	5.4	0.0	14.2	2.7	0.0	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.7	59.6	31.8	95.3	68.5	67.9	115.8	0.0	55.9	76.1	0.0	95.4
LnGrp LOS	F	E	C	F	E	E	F	A	E	E	A	F
Approach Vol, veh/h		1362			1439			547			589	
Approach Delay, s/veh		65.1			73.8			68.3			93.0	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.3	46.8	14.1	41.2	26.0	44.1	12.1	43.2				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 19	* 41	8.6	* 36	21.5	38.3	8.5	* 36				
Max Q Clear Time (g_c+I1), s	20.0	40.7	9.9	38.0	22.8	37.9	7.1	33.2				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	72.9
HCM 6th LOS	E

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	476	307	54	610	201	402	279	51	196	335	215
Future Volume (veh/h)	233	476	307	54	610	201	402	279	51	196	335	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	277	567	107	64	726	63	479	332	1	233	399	37
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1449	645	317	1382	616	460	554	244	382	475	212
Arrive On Green	0.11	0.41	0.41	0.09	0.39	0.39	0.13	0.16	0.16	0.11	0.13	0.13
Sat Flow, veh/h	3456	3554	1582	3456	3554	1585	3456	3554	1564	3456	3554	1585
Grp Volume(v), veh/h	277	567	107	64	726	63	479	332	1	233	399	37
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1585	1728	1777	1564	1728	1777	1585
Q Serve(g_s), s	7.7	11.2	4.3	1.7	15.6	2.5	13.2	8.6	0.1	6.4	10.9	2.1
Cycle Q Clear(g_c), s	7.7	11.2	4.3	1.7	15.6	2.5	13.2	8.6	0.1	6.4	10.9	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	1449	645	317	1382	616	460	554	244	382	475	212
V/C Ratio(X)	0.72	0.39	0.17	0.20	0.53	0.10	1.04	0.60	0.00	0.61	0.84	0.17
Avail Cap(c_a), veh/h	383	1449	645	383	1382	616	460	1361	599	494	1396	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	20.7	18.7	41.7	23.3	19.3	43.0	39.0	35.4	42.1	42.0	38.1
Incr Delay (d2), s/veh	5.8	0.8	0.6	0.1	1.4	0.3	53.4	0.4	0.0	0.6	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.5	1.6	0.7	6.3	0.9	8.8	3.6	0.0	2.6	4.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	21.5	19.2	41.8	24.7	19.6	96.4	39.4	35.4	42.7	43.5	38.3
LnGrp LOS	D	C	B	D	C	B	F	D	D	D	D	D
Approach Vol, veh/h		951			853			812			669	
Approach Delay, s/veh		29.1			25.6			73.0			42.9	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.4	19.0	19.1	14.9	46.3	16.8	21.3				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	14.2	38.0				
Max Q Clear Time (g_c+l1), s	9.7	17.6	15.2	12.9	3.7	13.2	8.4	10.6				
Green Ext Time (p_c), s	0.0	0.7	0.0	0.4	0.0	0.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary

4: Elk Grove Florin Rd & Sheldon Rd

Existing AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	411	338	131	193	536	152	96	654	77	166	768	454
Future Volume (veh/h)	411	338	131	193	536	152	96	654	77	166	768	454
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	447	367	26	210	583	24	104	711	84	180	835	292
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	491	820	366	335	660	294	287	1278	570	301	1858	577
Arrive On Green	0.14	0.23	0.23	0.10	0.19	0.19	0.08	0.36	0.36	0.09	0.37	0.37
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	447	367	26	210	583	24	104	711	84	180	835	292
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1763	1572	1714	1689	1572
Q Serve(g_s), s	13.1	9.1	1.3	6.0	16.4	1.3	2.9	16.4	3.7	5.2	12.8	14.7
Cycle Q Clear(g_c), s	13.1	9.1	1.3	6.0	16.4	1.3	2.9	16.4	3.7	5.2	12.8	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	820	366	335	660	294	287	1278	570	301	1858	577
V/C Ratio(X)	0.91	0.45	0.07	0.63	0.88	0.08	0.36	0.56	0.15	0.60	0.45	0.51
Avail Cap(c_a), veh/h	491	1503	670	440	1451	647	302	1278	570	302	1858	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	33.5	30.6	44.2	40.4	34.2	44.2	26.0	21.9	44.8	24.5	25.1
Incr Delay (d2), s/veh	20.7	0.1	0.0	0.7	1.6	0.0	0.3	1.7	0.5	2.3	0.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	3.8	0.5	2.5	7.0	0.5	1.2	6.8	1.4	2.2	4.9	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	33.7	30.6	45.0	42.0	34.3	44.5	27.7	22.4	47.1	25.3	28.3
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h	840			817			899			1307		
Approach Delay, s/veh	49.6			42.5			29.2			29.0		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	43.2	20.0	24.5	14.7	42.8	15.4	29.1				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	13.1	43.5				
Max Q Clear Time (g_c+I1), s	4.9	16.7	15.1	18.4	7.2	18.4	8.0	11.1				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	36.4											
HCM 6th LOS	D											
Notes												
User approved ignoring U-Turning movement.												

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: ENP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.599	9.4	LOS A	5.7	145.3	0.70	0.62	1.00	31.2
8	T1	All MCs	991	3.0	991	3.0	0.599	10.1	LOS B	5.7	145.3	0.65	0.56	0.88	32.3
18	R2	All MCs	168	3.0	168	3.0	0.303	5.3	LOS A	1.4	35.2	0.51	0.36	0.51	33.6
Approach			1230	3.0	1230	3.0	0.599	9.4	LOS A	5.7	145.3	0.64	0.53	0.84	32.4
East: Sheldon Road															
1	L2	All MCs	194	3.0	194	3.0	1.033	82.3	LOS F	15.4	393.5	1.00	1.99	4.62	15.5
6	T1	All MCs	223	3.0	223	3.0	1.033	82.3	LOS F	15.4	393.5	1.00	1.99	4.62	15.7
16	R2	All MCs	25	3.0	25	3.0	1.033	89.1	LOS F	15.4	393.5	1.00	1.99	4.62	15.6
Approach			441	3.0	441	3.0	1.033	82.7	LOS F	15.4	393.5	1.00	1.99	4.62	15.6
North: Bradshaw Road															
7	L2	All MCs	27	3.0	27	3.0	0.619	9.8	LOS A	6.3	162.2	0.71	0.64	1.04	31.2
4	T1	All MCs	910	3.0	910	3.0	0.619	9.8	LOS A	6.3	162.2	0.70	0.61	1.00	32.0
14	R2	All MCs	349	3.0	349	3.0	0.313	5.3	LOS A	1.4	37.0	0.51	0.35	0.51	33.4
Approach			1286	3.0	1286	3.0	0.619	8.6	LOS A	6.3	162.2	0.65	0.54	0.86	32.3
West: Sheldon Road															
5	L2	All MCs	288	3.0	288	3.0	0.795	27.0	LOS D	6.4	163.3	0.88	1.18	1.92	24.5
2	T1	All MCs	173	3.0	173	3.0	0.795	27.0	LOS D	6.4	163.3	0.88	1.18	1.92	24.9
12	R2	All MCs	58	3.0	58	3.0	0.795	32.2	LOS D	6.4	163.3	0.88	1.18	1.92	24.7
Approach			519	3.0	519	3.0	0.795	27.6	LOS D	6.4	163.3	0.88	1.18	1.92	24.6
All Vehicles			3476	3.0	3476	3.0	1.033	21.1	LOS C	15.4	393.5	0.72	0.82	1.49	27.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\1_Existing\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: ENP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	134	1.0	134	1.0	0.652	13.5	LOS B	7.2	181.3	0.82	0.81	1.30	29.2
8	T1	All MCs	345	1.0	345	1.0	0.652	13.5	LOS B	7.2	181.3	0.82	0.81	1.30	29.7
18	R2	All MCs	151	1.0	151	1.0	0.652	13.5	LOS B	7.2	181.3	0.82	0.81	1.30	29.5
Approach			630	1.0	630	1.0	0.652	13.5	LOS B	7.2	181.3	0.82	0.81	1.30	29.6
East: Sheldon Road															
1	L2	All MCs	199	1.0	199	1.0	0.809	23.0	LOS C	11.8	297.0	0.98	1.18	2.03	26.0
6	T1	All MCs	469	1.0	469	1.0	0.809	23.0	LOS C	11.8	297.0	0.98	1.18	2.03	26.4
16	R2	All MCs	19	1.0	19	1.0	0.809	23.0	LOS C	11.8	297.0	0.98	1.18	2.03	26.2
Approach			687	1.0	687	1.0	0.809	23.0	LOS C	11.8	297.0	0.98	1.18	2.03	26.2
North: Waterman Road															
7	L2	All MCs	27	1.0	27	1.0	0.705	21.2	LOS C	5.6	141.0	0.85	1.00	1.50	26.9
4	T1	All MCs	425	1.0	425	1.0	0.705	21.2	LOS C	5.6	141.0	0.85	1.00	1.50	27.3
14	R2	All MCs	226	1.0	226	1.0	0.353	10.4	LOS B	1.6	39.6	0.68	0.67	0.78	31.0
Approach			677	1.0	677	1.0	0.705	17.6	LOS C	5.6	141.0	0.80	0.89	1.26	28.4
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	30.8
2	T1	All MCs	320	1.0	320	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.4
12	R2	All MCs	160	1.0	160	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.2
Approach			608	1.0	608	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.2
All Vehicles			2602	1.0	2602	1.0	0.809	16.1	LOS C	11.8	297.0	0.84	0.90	1.41	28.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\1_Existing\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	702	182	275	800	30	112	207	142	25	180	171
Future Volume (veh/h)	196	702	182	275	800	30	112	207	142	25	180	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	228	816	25	320	930	35	130	241	165	29	209	199
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	261	871	389	342	1019	38	151	341	233	36	231	220
Arrive On Green	0.15	0.24	0.24	0.19	0.29	0.29	0.08	0.33	0.33	0.02	0.26	0.26
Sat Flow, veh/h	1795	3582	1598	1795	3519	132	1795	1042	714	1795	881	838
Grp Volume(v), veh/h	228	816	25	320	473	492	130	0	406	29	0	408
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1861	1795	0	1756	1795	0	1719
Q Serve(g_s), s	11.7	21.0	1.1	16.5	24.0	24.0	6.7	0.0	19.0	1.5	0.0	21.5
Cycle Q Clear(g_c), s	11.7	21.0	1.1	16.5	24.0	24.0	6.7	0.0	19.0	1.5	0.0	21.5
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.41	1.00		0.49
Lane Grp Cap(c), veh/h	261	871	389	342	519	539	151	0	574	36	0	452
V/C Ratio(X)	0.87	0.94	0.06	0.94	0.91	0.91	0.86	0.00	0.71	0.81	0.00	0.90
Avail Cap(c_a), veh/h	264	871	389	342	519	539	151	0	712	113	0	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.3	34.8	27.3	37.4	32.2	32.2	42.5	0.0	27.7	45.9	0.0	33.5
Incr Delay (d2), s/veh	25.0	18.5	0.3	31.9	22.9	22.3	35.1	0.0	1.6	15.0	0.0	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	10.8	0.4	9.9	12.9	13.3	4.3	0.0	7.6	0.8	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	53.4	27.6	69.4	55.1	54.5	77.6	0.0	29.2	60.8	0.0	42.7
LnGrp LOS	E	D	C	E	E	D	E	A	C	E	A	D
Approach Vol, veh/h		1069			1285			536			437	
Approach Delay, s/veh		55.1			58.4			41.0			43.9	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	32.6	13.4	29.9	22.4	28.2	7.4	35.9				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 14	* 27	7.9	* 36	17.9	22.6	5.9	* 38				
Max Q Clear Time (g_c+I1), s	13.7	26.0	8.7	23.5	18.5	23.0	3.5	21.0				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.7	0.0	0.0	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay 52.6
HCM 6th LOS D

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	513	225	82	509	104	165	282	79	151	353	241
Future Volume (veh/h)	173	513	225	82	509	104	165	282	79	151	353	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	175	518	96	83	514	41	167	285	12	153	357	36
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	389	1511	664	351	1472	656	388	461	205	386	459	205
Arrive On Green	0.11	0.42	0.42	0.10	0.41	0.41	0.11	0.13	0.13	0.11	0.13	0.13
Sat Flow, veh/h	3483	3582	1575	3483	3582	1595	3483	3582	1590	3483	3582	1598
Grp Volume(v), veh/h	175	518	96	83	514	41	167	285	12	153	357	36
Grp Sat Flow(s),veh/h/ln	1742	1791	1575	1742	1791	1595	1742	1791	1590	1742	1791	1598
Q Serve(g_s), s	4.6	9.5	3.7	2.1	9.6	1.5	4.4	7.4	0.6	4.0	9.4	2.0
Cycle Q Clear(g_c), s	4.6	9.5	3.7	2.1	9.6	1.5	4.4	7.4	0.6	4.0	9.4	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	1511	664	351	1472	656	388	461	205	386	459	205
V/C Ratio(X)	0.45	0.34	0.14	0.24	0.35	0.06	0.43	0.62	0.06	0.40	0.78	0.18
Avail Cap(c_a), veh/h	403	1511	664	400	1472	656	400	1439	639	400	1439	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	19.1	17.4	40.4	19.8	17.4	40.5	40.2	37.3	40.3	41.2	37.9
Incr Delay (d2), s/veh	0.3	0.6	0.5	0.1	0.7	0.2	0.3	0.5	0.0	0.2	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.8	1.3	0.9	3.9	0.6	1.8	3.1	0.2	1.7	4.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	19.7	17.8	40.5	20.4	17.6	40.7	40.8	37.4	40.6	42.3	38.1
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h	789			638			464			546		
Approach Delay, s/veh	24.2			22.9			40.7			41.5		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	45.9	16.7	18.3	15.6	47.0	16.6	18.4				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.3	40.1	11.2	39.2	11.2	40.2	11.2	39.2				
Max Q Clear Time (g_c+I1), s	6.6	11.6	6.4	11.4	4.1	11.5	6.0	9.4				
Green Ext Time (p_c), s	0.0	0.5	0.0	0.3	0.0	0.5	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	30.9											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary

4: Elk Grove Florin Rd & Sheldon Rd

Existing PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	398	114	156	564	72	108	665	120	143	779	431
Future Volume (veh/h)	420	398	114	156	564	72	108	665	120	143	779	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	428	25	168	606	12	116	715	129	154	838	277
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	870	388	331	710	315	290	1269	566	297	1834	569
Arrive On Green	0.14	0.24	0.24	0.10	0.20	0.20	0.08	0.36	0.36	0.09	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	3554	1584	3456	5106	1585
Grp Volume(v), veh/h	452	428	25	168	606	12	116	715	129	154	838	277
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1777	1584	1728	1702	1585
Q Serve(g_s), s	13.4	10.7	1.3	4.8	17.0	0.6	3.3	16.8	5.9	4.4	13.0	14.1
Cycle Q Clear(g_c), s	13.4	10.7	1.3	4.8	17.0	0.6	3.3	16.8	5.9	4.4	13.0	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	870	388	331	710	315	290	1269	566	297	1834	569
V/C Ratio(X)	0.93	0.49	0.06	0.51	0.85	0.04	0.40	0.56	0.23	0.52	0.46	0.49
Avail Cap(c_a), veh/h	487	1558	695	374	1441	640	300	1269	566	300	1834	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	33.6	30.0	44.5	40.0	33.4	45.0	26.8	23.3	45.3	25.4	25.8
Incr Delay (d2), s/veh	23.8	0.2	0.0	0.4	1.2	0.0	0.3	1.8	0.9	0.7	0.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	4.5	0.5	2.0	7.3	0.2	1.4	7.0	2.3	1.9	5.1	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	33.7	30.0	45.0	41.1	33.4	45.3	28.6	24.2	46.0	26.3	28.7
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h					786				960			
Approach Delay, s/veh	50.6				41.8				30.0			
Approach LOS	D				D				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	43.0	20.0	26.1	14.7	42.8	15.3	30.8				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	11.2	45.4				
Max Q Clear Time (g_c+l1), s	5.3	16.1	15.4	19.0	6.4	18.8	6.8	12.7				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: ENP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	39	3.0	39	3.0	0.574	11.4	LOS B	4.6	118.4	0.73	0.70	1.07	30.4
8	T1	All MCs	651	3.0	651	3.0	0.574	11.3	LOS B	4.6	118.4	0.69	0.64	0.97	31.4
18	R2	All MCs	149	3.0	149	3.0	0.290	6.6	LOS A	1.2	31.8	0.56	0.44	0.56	32.9
Approach			839	3.0	839	3.0	0.574	10.5	LOS B	4.6	118.4	0.67	0.61	0.90	31.6
East: Sheldon Road															
1	L2	All MCs	63	3.0	63	3.0	0.951	68.1	LOS F	11.0	281.9	0.97	1.56	3.06	17.3
6	T1	All MCs	249	3.0	249	3.0	0.951	68.1	LOS F	11.0	281.9	0.97	1.56	3.06	17.5
16	R2	All MCs	30	3.0	30	3.0	0.951	72.5	LOS F	11.0	281.9	0.97	1.56	3.06	17.4
Approach			343	3.0	343	3.0	0.951	68.5	LOS F	11.0	281.9	0.97	1.56	3.06	17.4
North: Bradshaw Road															
7	L2	All MCs	39	3.0	39	3.0	0.608	9.3	LOS A	6.1	156.0	0.66	0.51	0.86	31.4
4	T1	All MCs	879	3.0	879	3.0	0.608	9.3	LOS A	6.1	156.0	0.65	0.50	0.84	32.1
14	R2	All MCs	392	3.0	392	3.0	0.308	5.1	LOS A	1.5	37.5	0.45	0.29	0.45	33.5
Approach			1310	3.0	1310	3.0	0.608	8.0	LOS A	6.1	156.0	0.59	0.44	0.72	32.5
West: Sheldon Road															
5	L2	All MCs	191	3.0	191	3.0	0.747	22.1	LOS C	5.9	151.7	0.86	1.08	1.71	26.2
2	T1	All MCs	292	3.0	292	3.0	0.747	22.1	LOS C	5.9	151.7	0.86	1.08	1.71	26.6
12	R2	All MCs	44	3.0	44	3.0	0.747	26.4	LOS D	5.9	151.7	0.86	1.08	1.71	26.4
Approach			526	3.0	526	3.0	0.747	22.4	LOS C	5.9	151.7	0.86	1.08	1.71	26.4
All Vehicles			3018	3.0	3018	3.0	0.951	18.1	LOS C	11.0	281.9	0.70	0.73	1.21	28.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\1_Existing\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	220	2.0	220	2.0	0.667	12.3	LOS B	7.9	199.6	0.83	0.80	1.30	29.5
8	T1	All MCs	378	2.0	378	2.0	0.667	12.3	LOS B	7.9	199.6	0.83	0.80	1.30	30.0
18	R2	All MCs	169	2.0	169	2.0	0.667	12.3	LOS B	7.9	199.6	0.83	0.80	1.30	29.8
Approach			767	2.0	767	2.0	0.667	12.3	LOS B	7.9	199.6	0.83	0.80	1.30	29.8
East: Sheldon Road															
1	L2	All MCs	188	2.0	188	2.0	1.111	90.1	LOS F	39.5	1003.5	1.00	2.66	5.99	14.7
6	T1	All MCs	509	2.0	509	2.0	1.111	90.1	LOS F	39.5	1003.5	1.00	2.66	5.99	14.9
16	R2	All MCs	54	2.0	54	2.0	1.111	90.1	LOS F	39.5	1003.5	1.00	2.66	5.99	14.8
Approach			752	2.0	752	2.0	1.111	90.1	LOS F	39.5	1003.5	1.00	2.66	5.99	14.8
North: Waterman Road															
7	L2	All MCs	38	2.0	38	2.0	0.844	33.9	LOS D	8.8	222.8	0.94	1.26	2.13	23.3
4	T1	All MCs	464	2.0	464	2.0	0.844	33.9	LOS D	8.8	222.8	0.94	1.26	2.13	23.7
14	R2	All MCs	204	2.0	204	2.0	0.343	10.9	LOS B	1.5	37.1	0.69	0.69	0.79	30.7
Approach			706	2.0	706	2.0	0.844	27.3	LOS D	8.8	222.8	0.86	1.10	1.74	25.3
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.745	19.5	LOS C	8.2	208.1	0.92	1.05	1.70	27.1
2	T1	All MCs	311	2.0	311	2.0	0.745	19.5	LOS C	8.2	208.1	0.92	1.05	1.70	27.5
12	R2	All MCs	157	2.0	157	2.0	0.745	19.5	LOS C	8.2	208.1	0.92	1.05	1.70	27.3
Approach			608	2.0	608	2.0	0.745	19.5	LOS C	8.2	208.1	0.92	1.05	1.70	27.4
All Vehicles			2834	2.0	2834	2.0	1.111	38.2	LOS E	39.5	1003.5	0.90	1.42	2.74	22.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	957	166	273	1015	36	114	161	270	68	264	214
Future Volume (veh/h)	236	957	166	273	1015	36	114	161	270	68	264	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	1040	40	297	1103	39	124	175	293	74	287	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	1139	505	309	1200	42	133	187	313	93	266	216
Arrive On Green	0.15	0.32	0.32	0.17	0.34	0.34	0.07	0.30	0.30	0.05	0.28	0.28
Sat Flow, veh/h	1781	3554	1575	1781	3501	124	1781	621	1040	1781	954	775
Grp Volume(v), veh/h	257	1040	40	297	560	582	124	0	468	74	0	520
Grp Sat Flow(s),veh/h/ln	1781	1777	1575	1781	1777	1848	1781	0	1661	1781	0	1729
Q Serve(g_s), s	19.4	38.1	2.4	22.4	40.9	41.0	9.4	0.0	37.1	5.6	0.0	37.8
Cycle Q Clear(g_c), s	19.4	38.1	2.4	22.4	40.9	41.0	9.4	0.0	37.1	5.6	0.0	37.8
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.63	1.00		0.45
Lane Grp Cap(c), veh/h	271	1139	505	309	609	633	133	0	501	93	0	483
V/C Ratio(X)	0.95	0.91	0.08	0.96	0.92	0.92	0.93	0.00	0.93	0.79	0.00	1.08
Avail Cap(c_a), veh/h	271	1139	505	309	609	633	133	0	502	93	0	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.9	44.2	32.1	55.5	42.7	42.7	62.3	0.0	46.0	63.4	0.0	48.8
Incr Delay (d2), s/veh	40.3	12.6	0.3	40.3	21.2	20.7	57.2	0.0	24.5	33.5	0.0	63.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	18.1	0.9	13.3	20.9	21.6	6.3	0.0	18.2	3.3	0.0	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.2	56.7	32.4	95.8	63.9	63.4	119.5	0.0	70.5	97.0	0.0	112.1
LnGrp LOS	F	E	C	F	E	E	F	A	E	F	A	F
Approach Vol, veh/h	1337			1439			592			594		
Approach Delay, s/veh	63.8			70.3			80.8			110.3		
Approach LOS	E			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	51.8	15.6	43.0	28.0	48.8	12.6	46.0				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 21	* 46	10.1	* 38	23.5	43.0	7.1	* 41				
Max Q Clear Time (g_c+I1), s	21.4	43.0	11.4	39.8	24.4	40.1	7.6	39.1				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay 75.7
HCM 6th LOS E

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	476	307	54	610	201	402	284	51	206	355	246
Future Volume (veh/h)	238	476	307	54	610	201	402	284	51	206	355	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	283	567	114	64	726	66	479	338	0	245	423	69
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	380	1437	640	316	1372	612	456	577	257	380	498	222
Arrive On Green	0.11	0.40	0.40	0.09	0.39	0.39	0.13	0.16	0.00	0.11	0.14	0.14
Sat Flow, veh/h	3456	3554	1582	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	283	567	114	64	726	66	479	338	0	245	423	69
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.9	11.3	4.6	1.7	15.8	2.7	13.2	8.8	0.0	6.8	11.6	3.9
Cycle Q Clear(g_c), s	7.9	11.3	4.6	1.7	15.8	2.7	13.2	8.8	0.0	6.8	11.6	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	1437	640	316	1372	612	456	577	257	380	498	222
V/C Ratio(X)	0.74	0.39	0.18	0.20	0.53	0.11	1.05	0.59	0.00	0.65	0.85	0.31
Avail Cap(c_a), veh/h	380	1437	640	380	1372	612	456	1325	591	515	1386	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	21.1	19.1	42.1	23.7	19.7	43.4	38.8	0.0	42.6	42.0	38.7
Incr Delay (d2), s/veh	6.9	0.8	0.6	0.1	1.5	0.4	56.0	0.4	0.0	0.7	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.5	1.7	0.7	6.4	1.0	8.9	3.7	0.0	2.8	5.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	21.9	19.7	42.2	25.2	20.0	99.4	39.1	0.0	43.3	43.6	38.9
LnGrp LOS	D	C	B	D	C	C	F	D	A	D	D	D
Approach Vol, veh/h	964			856			817			737		
Approach Delay, s/veh	29.9			26.0			74.4			43.1		
Approach LOS	C			C			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.4	19.0	19.8	14.9	46.3	16.8	22.0				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	14.9	37.3				
Max Q Clear Time (g_c+I1), s	9.9	17.8	15.2	13.6	3.7	13.3	8.8	10.8				
Green Ext Time (p_c), s	0.0	0.7	0.0	0.4	0.0	0.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary

4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	411	347	131	199	597	154	96	654	78	166	768	454
Future Volume (veh/h)	411	347	131	199	597	154	96	654	78	166	768	454
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	447	377	27	216	649	34	104	711	85	180	835	291
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	479	880	393	328	724	323	281	1249	557	294	1814	563
Arrive On Green	0.14	0.25	0.25	0.10	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	447	377	27	216	649	34	104	711	85	180	835	291
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1763	1572	1714	1689	1572
Q Serve(g_s), s	13.5	9.4	1.4	6.3	18.7	1.8	3.0	17.0	3.9	5.3	13.2	15.2
Cycle Q Clear(g_c), s	13.5	9.4	1.4	6.3	18.7	1.8	3.0	17.0	3.9	5.3	13.2	15.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	880	393	328	724	323	281	1249	557	294	1814	563
V/C Ratio(X)	0.93	0.43	0.07	0.66	0.90	0.11	0.37	0.57	0.15	0.61	0.46	0.52
Avail Cap(c_a), veh/h	479	1449	646	450	1418	633	296	1249	557	296	1814	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	32.9	29.9	45.6	40.4	33.7	45.4	27.3	23.0	46.1	25.8	26.4
Incr Delay (d2), s/veh	24.9	0.1	0.0	0.8	1.7	0.1	0.3	1.9	0.6	2.7	0.8	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	3.9	0.5	2.7	8.0	0.7	1.2	7.1	1.5	2.3	5.2	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	33.0	29.9	46.4	42.0	33.7	45.7	29.1	23.6	48.7	26.6	29.8
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h	851				899		900				1306	
Approach Delay, s/veh	52.0				42.8		30.5				30.3	
Approach LOS	D				D		C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.4	43.2	20.0	26.9	14.8	42.8	15.4	31.5				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	13.7	42.9				
Max Q Clear Time (g_c+I1), s	5.0	17.2	15.5	20.7	7.3	19.0	8.3	11.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			37.9									
HCM 6th LOS			D									
Notes												
User approved ignoring U-Turning movement.												

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.613	9.8	LOS A	5.9	152.2	0.72	0.67	1.07	31.0
8	T1	All MCs	991	3.0	991	3.0	0.613	10.5	LOS B	5.9	152.2	0.67	0.59	0.93	32.2
18	R2	All MCs	168	3.0	168	3.0	0.310	5.4	LOS A	1.4	35.9	0.53	0.38	0.53	33.5
Approach			1230	3.0	1230	3.0	0.613	9.7	LOS A	5.9	152.2	0.66	0.57	0.89	32.3
East: Sheldon Road															
1	L2	All MCs	194	3.0	194	3.0	1.055	89.2	LOS F	17.0	435.2	1.00	2.10	5.03	14.8
6	T1	All MCs	224	3.0	224	3.0	1.055	89.2	LOS F	17.0	435.2	1.00	2.10	5.03	15.0
16	R2	All MCs	25	3.0	25	3.0	1.055	96.1	LOS F	17.0	435.2	1.00	2.10	5.03	14.9
Approach			442	3.0	442	3.0	1.055	89.6	LOS F	17.0	435.2	1.00	2.10	5.03	14.9
North: Bradshaw Road															
7	L2	All MCs	31	3.0	31	3.0	0.620	9.7	LOS A	6.4	163.2	0.71	0.64	1.04	31.2
4	T1	All MCs	910	3.0	910	3.0	0.620	9.8	LOS A	6.4	163.2	0.69	0.61	0.99	32.0
14	R2	All MCs	353	3.0	353	3.0	0.313	5.3	LOS A	1.4	37.1	0.51	0.35	0.51	33.4
Approach			1294	3.0	1294	3.0	0.620	8.6	LOS A	6.4	163.2	0.64	0.54	0.86	32.3
West: Sheldon Road															
5	L2	All MCs	308	3.0	308	3.0	0.842	31.5	LOS D	7.7	197.4	0.91	1.28	2.20	23.4
2	T1	All MCs	182	3.0	182	3.0	0.842	31.5	LOS D	7.7	197.4	0.91	1.28	2.20	23.7
12	R2	All MCs	60	3.0	60	3.0	0.842	36.7	LOS E	7.7	197.4	0.91	1.28	2.20	23.6
Approach			549	3.0	549	3.0	0.842	32.1	LOS D	7.7	197.4	0.91	1.28	2.20	23.5
All Vehicles			3515	3.0	3515	3.0	1.055	22.8	LOS C	17.0	435.2	0.73	0.86	1.60	26.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\2_Existing Plus Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Queue	Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				mph
South: Waterman Road															
3	L2	All MCs	138	1.0	138	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	27.7
8	T1	All MCs	348	1.0	348	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	28.2
18	R2	All MCs	166	1.0	166	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	28.0
Approach			652	1.0	652	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	28.1
East: Sheldon Road															
1	L2	All MCs	206	1.0	206	1.0	0.861	27.8	LOS D	14.7	370.9	1.00	1.33	2.34	24.6
6	T1	All MCs	490	1.0	490	1.0	0.861	27.8	LOS D	14.7	370.9	1.00	1.33	2.34	25.0
16	R2	All MCs	30	1.0	30	1.0	0.861	27.8	LOS D	14.7	370.9	1.00	1.33	2.34	24.8
Approach			727	1.0	727	1.0	0.861	27.8	LOS D	14.7	370.9	1.00	1.33	2.34	24.9
North: Waterman Road															
7	L2	All MCs	55	1.0	55	1.0	0.788	27.4	LOS D	7.2	182.7	0.90	1.13	1.80	25.0
4	T1	All MCs	434	1.0	434	1.0	0.788	27.4	LOS D	7.2	182.7	0.90	1.13	1.80	25.4
14	R2	All MCs	226	1.0	226	1.0	0.364	10.8	LOS B	1.6	41.1	0.69	0.69	0.81	30.8
Approach			715	1.0	715	1.0	0.788	22.2	LOS C	7.2	182.7	0.84	0.99	1.49	26.8
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.1
2	T1	All MCs	377	1.0	377	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.6
12	R2	All MCs	170	1.0	170	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.4
Approach			674	1.0	674	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.5
All Vehicles			2768	1.0	2768	1.0	0.861	20.0	LOS C	14.7	370.9	0.89	1.04	1.68	27.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\2_Existing Plus Project
\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	702	191	277	800	30	115	217	143	25	206	171
Future Volume (veh/h)	196	702	191	277	800	30	115	217	143	25	206	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	228	816	36	322	930	35	134	252	166	29	240	199
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	916	409	349	1085	41	154	360	237	36	259	215
Arrive On Green	0.14	0.26	0.26	0.19	0.31	0.31	0.09	0.34	0.34	0.02	0.27	0.27
Sat Flow, veh/h	1795	3582	1598	1795	3519	132	1795	1060	698	1795	946	784
Grp Volume(v), veh/h	228	816	36	322	473	492	134	0	418	29	0	439
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1861	1795	0	1759	1795	0	1730
Q Serve(g_s), s	13.5	23.8	1.9	19.1	26.9	26.9	8.0	0.0	22.3	1.7	0.0	26.8
Cycle Q Clear(g_c), s	13.5	23.8	1.9	19.1	26.9	26.9	8.0	0.0	22.3	1.7	0.0	26.8
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.40	1.00		0.45
Lane Grp Cap(c), veh/h	257	916	409	349	552	574	154	0	597	36	0	473
V/C Ratio(X)	0.89	0.89	0.09	0.92	0.86	0.86	0.87	0.00	0.70	0.80	0.00	0.93
Avail Cap(c_a), veh/h	268	916	409	356	552	574	154	0	638	101	0	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.6	38.8	30.7	42.8	35.2	35.2	48.9	0.0	31.0	52.9	0.0	38.3
Incr Delay (d2), s/veh	26.3	12.7	0.4	27.9	15.7	15.2	36.5	0.0	2.5	14.0	0.0	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	11.6	0.7	10.8	13.5	14.0	5.0	0.0	9.4	0.9	0.0	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	51.5	31.1	70.7	50.9	50.4	85.4	0.0	33.5	66.9	0.0	56.1
LnGrp LOS	E	D	C	E	D	D	F	A	C	E	A	E
Approach Vol, veh/h	1080			1287			552			468		
Approach Delay, s/veh	55.2			55.7			46.1			56.8		
Approach LOS	E			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.9	38.8	14.8	34.8	25.6	33.1	7.7	42.0				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 16	* 33	9.3	* 36	21.5	27.6	6.1	* 39				
Max Q Clear Time (g_c+I1), s	15.5	28.9	10.0	28.8	21.1	25.8	3.7	24.3				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.6	0.0	0.5	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay 54.1
HCM 6th LOS D

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	513	225	82	509	104	165	308	79	154	360	252
Future Volume (veh/h)	201	513	225	82	509	104	165	308	79	154	360	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	203	518	96	83	514	41	167	311	12	156	364	38
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	394	1493	656	353	1451	646	391	468	208	389	466	208
Arrive On Green	0.11	0.42	0.42	0.10	0.41	0.41	0.11	0.13	0.13	0.11	0.13	0.13
Sat Flow, veh/h	3483	3582	1574	3483	3582	1595	3483	3582	1590	3483	3582	1598
Grp Volume(v), veh/h	203	518	96	83	514	41	167	311	12	156	364	38
Grp Sat Flow(s),veh/h/ln	1742	1791	1574	1742	1791	1595	1742	1791	1590	1742	1791	1598
Q Serve(g_s), s	5.3	9.6	3.7	2.1	9.7	1.5	4.3	8.0	0.6	4.0	9.5	2.1
Cycle Q Clear(g_c), s	5.3	9.6	3.7	2.1	9.7	1.5	4.3	8.0	0.6	4.0	9.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	1493	656	353	1451	646	391	468	208	389	466	208
V/C Ratio(X)	0.52	0.35	0.15	0.24	0.35	0.06	0.43	0.66	0.06	0.40	0.78	0.18
Avail Cap(c_a), veh/h	453	1493	656	395	1451	646	403	1449	643	403	1449	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	19.3	17.5	40.1	20.0	17.6	40.1	40.1	36.9	40.0	40.8	37.6
Incr Delay (d2), s/veh	0.4	0.6	0.5	0.1	0.7	0.2	0.3	0.6	0.0	0.2	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.8	1.3	0.9	3.9	0.6	1.8	3.4	0.2	1.7	4.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	19.9	18.0	40.2	20.7	17.8	40.4	40.7	36.9	40.3	41.9	37.7
LnGrp LOS	D	B	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h	817			638			490			558		
Approach Delay, s/veh	24.9			23.0			40.5			41.2		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	45.1	16.7	18.4	15.6	46.2	16.6	18.5				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	12.6	38.8	11.2	39.2	11.0	40.4	11.2	39.2				
Max Q Clear Time (g_c+I1), s	7.3	11.7	6.3	11.5	4.1	11.6	6.0	10.0				
Green Ext Time (p_c), s	0.0	0.5	0.0	0.3	0.0	0.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary

4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	452	114	158	585	73	108	665	125	145	779	431
Future Volume (veh/h)	420	452	114	158	585	73	108	665	125	145	779	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	486	24	170	629	12	116	715	134	156	838	277
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	890	397	329	731	325	288	1260	561	295	1820	565
Arrive On Green	0.14	0.25	0.25	0.10	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	3554	1584	3456	5106	1585
Grp Volume(v), veh/h	452	486	24	170	629	12	116	715	134	156	838	277
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1777	1584	1728	1702	1585
Q Serve(g_s), s	13.5	12.4	1.2	4.9	17.8	0.6	3.3	17.0	6.2	4.5	13.2	14.2
Cycle Q Clear(g_c), s	13.5	12.4	1.2	4.9	17.8	0.6	3.3	17.0	6.2	4.5	13.2	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	890	397	329	731	325	288	1260	561	295	1820	565
V/C Ratio(X)	0.94	0.55	0.06	0.52	0.86	0.04	0.40	0.57	0.24	0.53	0.46	0.49
Avail Cap(c_a), veh/h	483	1546	689	371	1430	635	298	1260	561	298	1820	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	34.0	29.8	44.9	40.0	33.2	45.4	27.2	23.8	45.7	25.9	26.2
Incr Delay (d2), s/veh	25.3	0.2	0.0	0.5	1.2	0.0	0.3	1.9	1.0	0.8	0.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.2	0.5	2.1	7.6	0.2	1.4	7.1	2.4	1.9	5.2	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	34.2	29.8	45.4	41.2	33.2	45.7	29.1	24.8	46.6	26.7	29.2
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h					811				965			
Approach Delay, s/veh	50.8				42.0				30.5			
Approach LOS	D				D				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	43.0	20.0	26.9	14.7	42.8	15.3	31.6				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	11.2	45.4				
Max Q Clear Time (g_c+I1), s	5.3	16.2	15.5	19.8	6.5	19.0	6.9	14.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	41	3.0	41	3.0	0.581	11.6	LOS B	4.7	120.9	0.73	0.71	1.09	30.3
8	T1	All MCs	651	3.0	651	3.0	0.581	11.5	LOS B	4.7	120.9	0.70	0.66	0.99	31.3
18	R2	All MCs	149	3.0	149	3.0	0.294	6.7	LOS A	1.3	32.2	0.57	0.45	0.57	32.8
Approach			841	3.0	841	3.0	0.581	10.7	LOS B	4.7	120.9	0.68	0.62	0.92	31.5
East: Sheldon Road															
1	L2	All MCs	63	3.0	63	3.0	0.984	76.3	LOS F	12.8	327.1	0.99	1.67	3.43	16.3
6	T1	All MCs	257	3.0	257	3.0	0.984	76.3	LOS F	12.8	327.1	0.99	1.67	3.43	16.4
16	R2	All MCs	30	3.0	30	3.0	0.984	80.7	LOS F	12.8	327.1	0.99	1.67	3.43	16.4
Approach			351	3.0	351	3.0	0.984	76.7	LOS F	12.8	327.1	0.99	1.67	3.43	16.4
North: Bradshaw Road															
7	L2	All MCs	39	3.0	39	3.0	0.621	9.6	LOS A	6.6	169.3	0.68	0.55	0.92	31.2
4	T1	All MCs	879	3.0	879	3.0	0.621	9.6	LOS A	6.6	169.3	0.67	0.54	0.90	31.9
14	R2	All MCs	410	3.0	410	3.0	0.314	5.2	LOS A	1.5	38.4	0.46	0.30	0.46	33.5
Approach			1329	3.0	1329	3.0	0.621	8.2	LOS A	6.6	169.3	0.60	0.46	0.77	32.4
West: Sheldon Road															
5	L2	All MCs	198	3.0	198	3.0	0.763	23.1	LOS C	6.2	159.6	0.87	1.10	1.76	25.8
2	T1	All MCs	295	3.0	295	3.0	0.763	23.1	LOS C	6.2	159.6	0.87	1.10	1.76	26.3
12	R2	All MCs	45	3.0	45	3.0	0.763	27.4	LOS D	6.2	159.6	0.87	1.10	1.76	26.1
Approach			538	3.0	538	3.0	0.763	23.5	LOS C	6.2	159.6	0.87	1.10	1.76	26.1
All Vehicles			3059	3.0	3059	3.0	0.984	19.4	LOS C	12.8	327.1	0.72	0.76	1.29	27.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\2_Existing Plus Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: EAP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	213	2.0	213	2.0	0.645	11.6	LOS B	7.3	184.2	0.80	0.75	1.22	29.8
8	T1	All MCs	376	2.0	376	2.0	0.645	11.6	LOS B	7.3	184.2	0.80	0.75	1.22	30.3
18	R2	All MCs	164	2.0	164	2.0	0.645	11.6	LOS B	7.3	184.2	0.80	0.75	1.22	30.1
Approach			753	2.0	753	2.0	0.645	11.6	LOS B	7.3	184.2	0.80	0.75	1.22	30.1
East: Sheldon Road															
1	L2	All MCs	167	2.0	167	2.0	0.935	43.4	LOS E	16.8	426.8	1.00	1.62	3.01	21.1
6	T1	All MCs	448	2.0	448	2.0	0.935	43.4	LOS E	16.8	426.8	1.00	1.62	3.01	21.4
16	R2	All MCs	23	2.0	23	2.0	0.935	43.4	LOS E	16.8	426.8	1.00	1.62	3.01	21.3
Approach			639	2.0	639	2.0	0.935	43.4	LOS E	16.8	426.8	1.00	1.62	3.01	21.3
North: Waterman Road															
7	L2	All MCs	33	2.0	33	2.0	0.816	30.4	LOS D	8.0	203.0	0.92	1.20	1.97	24.2
4	T1	All MCs	462	2.0	462	2.0	0.816	30.4	LOS D	8.0	203.0	0.92	1.20	1.97	24.6
14	R2	All MCs	205	2.0	205	2.0	0.338	10.6	LOS B	1.4	36.5	0.69	0.67	0.78	30.9
Approach			700	2.0	700	2.0	0.816	24.6	LOS C	8.0	203.0	0.85	1.04	1.62	26.1
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.724	18.2	LOS C	7.6	194.3	0.90	1.01	1.62	27.5
2	T1	All MCs	301	2.0	301	2.0	0.724	18.2	LOS C	7.6	194.3	0.90	1.01	1.62	27.9
12	R2	All MCs	155	2.0	155	2.0	0.724	18.2	LOS C	7.6	194.3	0.90	1.01	1.62	27.7
Approach			597	2.0	597	2.0	0.724	18.2	LOS C	7.6	194.3	0.90	1.01	1.62	27.8
All Vehicles			2688	2.0	2688	2.0	0.935	24.0	LOS C	16.8	426.8	0.88	1.09	1.84	26.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\3_Existing Plus Approved Project
\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing Plus Approved Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	957	172	273	1015	36	110	135	268	68	260	214
Future Volume (veh/h)	236	957	172	273	1015	36	110	135	268	68	260	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	1040	69	297	1103	39	120	147	291	74	283	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1083	480	305	1142	40	129	170	337	94	272	224
Arrive On Green	0.15	0.30	0.30	0.17	0.33	0.33	0.07	0.31	0.31	0.05	0.29	0.29
Sat Flow, veh/h	1781	3554	1575	1781	3501	124	1781	554	1096	1781	948	780
Grp Volume(v), veh/h	257	1040	69	297	560	582	120	0	438	74	0	516
Grp Sat Flow(s),veh/h/ln	1781	1777	1575	1781	1777	1848	1781	0	1650	1781	0	1728
Q Serve(g_s), s	18.0	36.1	4.0	20.8	38.9	38.9	8.4	0.0	31.4	5.1	0.0	36.0
Cycle Q Clear(g_c), s	18.0	36.1	4.0	20.8	38.9	38.9	8.4	0.0	31.4	5.1	0.0	36.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.66	1.00		0.45
Lane Grp Cap(c), veh/h	268	1083	480	305	580	603	129	0	507	94	0	496
V/C Ratio(X)	0.96	0.96	0.14	0.97	0.97	0.97	0.93	0.00	0.86	0.79	0.00	1.04
Avail Cap(c_a), veh/h	268	1083	480	305	580	603	129	0	507	121	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.8	42.9	31.7	51.7	41.6	41.6	57.8	0.0	41.0	58.7	0.0	44.7
Incr Delay (d2), s/veh	42.9	19.4	0.6	43.7	29.9	29.2	56.7	0.0	13.9	17.4	0.0	51.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	18.1	1.6	12.7	21.1	21.8	5.7	0.0	14.2	2.7	0.0	21.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.7	62.3	32.3	95.3	71.4	70.8	114.6	0.0	54.9	76.1	0.0	95.9
LnGrp LOS	F	E	C	F	E	E	F	A	D	E	A	F
Approach Vol, veh/h	1366			1439			558			590		
Approach Delay, s/veh	67.0			76.1			67.7			93.4		
Approach LOS	E			E			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.3	46.3	14.6	41.2	26.0	43.6	12.1	43.7				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 19	* 41	9.1	* 36	21.5	37.8	8.5	* 37				
Max Q Clear Time (g_c+l1), s	20.0	40.9	10.4	38.0	22.8	38.1	7.1	33.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay 74.4

HCM 6th LOS E

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing Plus Approved Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	531	321	54	631	213	407	285	51	229	352	218
Future Volume (veh/h)	241	531	321	54	631	213	407	285	51	229	352	218
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	287	632	111	64	751	67	485	339	1	273	419	45
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	380	1439	641	316	1373	612	457	573	252	380	494	221
Arrive On Green	0.11	0.41	0.41	0.09	0.39	0.39	0.13	0.16	0.16	0.11	0.14	0.14
Sat Flow, veh/h	3456	3554	1582	3456	3554	1585	3456	3554	1564	3456	3554	1585
Grp Volume(v), veh/h	287	632	111	64	751	67	485	339	1	273	419	45
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1585	1728	1777	1564	1728	1777	1585
Q Serve(g_s), s	8.1	12.9	4.5	1.7	16.4	2.7	13.2	8.8	0.1	7.6	11.5	2.5
Cycle Q Clear(g_c), s	8.1	12.9	4.5	1.7	16.4	2.7	13.2	8.8	0.1	7.6	11.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	1439	641	316	1373	612	457	573	252	380	494	221
V/C Ratio(X)	0.75	0.44	0.17	0.20	0.55	0.11	1.06	0.59	0.00	0.72	0.85	0.20
Avail Cap(c_a), veh/h	381	1439	641	381	1373	612	457	1402	617	443	1387	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	21.5	19.0	42.0	23.8	19.6	43.3	38.8	35.2	43.0	42.0	38.1
Incr Delay (d2), s/veh	7.5	1.0	0.6	0.1	1.6	0.4	59.6	0.4	0.0	3.5	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.2	1.6	0.7	6.7	1.0	9.2	3.7	0.0	3.3	4.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	22.5	19.6	42.1	25.4	20.0	102.9	39.2	35.2	46.4	43.5	38.3
LnGrp LOS	D	C	B	D	C	B	F	D	D	D	D	D
Approach Vol, veh/h	1030			882			825			737		
Approach Delay, s/veh	30.0			26.2			76.7			44.3		
Approach LOS	C			C			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.4	19.0	19.7	14.9	46.3	16.8	21.9				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	12.8	39.4				
Max Q Clear Time (g_c+I1), s	10.1	18.4	15.2	13.5	3.7	14.9	9.6	10.8				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.4	0.0	0.6	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				43.2								
HCM 6th LOS				D								
Notes												
User approved ignoring U-Turning movement.												

HCM 6th Signalized Intersection Summary

4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Approved Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	411	338	133	193	536	152	118	657	77	166	769	454
Future Volume (veh/h)	411	338	133	193	536	152	118	657	77	166	769	454
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	447	367	27	210	583	24	128	714	84	180	836	293
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	491	820	366	335	660	294	294	1278	570	301	1846	573
Arrive On Green	0.14	0.23	0.23	0.10	0.19	0.19	0.09	0.36	0.36	0.09	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	447	367	27	210	583	24	128	714	84	180	836	293
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1763	1572	1714	1689	1572
Q Serve(g_s), s	13.1	9.1	1.4	6.0	16.4	1.3	3.6	16.5	3.7	5.2	12.8	14.9
Cycle Q Clear(g_c), s	13.1	9.1	1.4	6.0	16.4	1.3	3.6	16.5	3.7	5.2	12.8	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	820	366	335	660	294	294	1278	570	301	1846	573
V/C Ratio(X)	0.91	0.45	0.07	0.63	0.88	0.08	0.43	0.56	0.15	0.60	0.45	0.51
Avail Cap(c_a), veh/h	491	1503	670	440	1451	647	302	1278	570	302	1846	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	33.5	30.6	44.2	40.4	34.2	44.3	26.0	21.9	44.8	24.7	25.3
Incr Delay (d2), s/veh	20.7	0.1	0.0	0.7	1.6	0.0	0.4	1.8	0.5	2.3	0.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	3.8	0.5	2.5	7.0	0.5	1.5	6.8	1.4	2.2	5.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	33.7	30.6	45.0	42.0	34.3	44.7	27.8	22.4	47.1	25.5	28.6
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h		841			817			926			1309	
Approach Delay, s/veh		49.6			42.5			29.6			29.1	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	43.0	20.0	24.5	14.7	42.8	15.4	29.1				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	13.1	43.5				
Max Q Clear Time (g_c+I1), s	5.6	16.9	15.1	18.4	7.2	18.5	8.0	11.1				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			36.5									
HCM 6th LOS			D									
Notes												
User approved ignoring U-Turning movement.												

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: EAP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] veh ft		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.601	9.5	LOS A	5.7	146.8	0.70	0.63	1.01	31.2
8	T1	All MCs	991	3.0	991	3.0	0.601	10.1	LOS B	5.7	146.8	0.66	0.56	0.89	32.3
18	R2	All MCs	168	3.0	168	3.0	0.304	5.3	LOS A	1.4	35.4	0.51	0.36	0.51	33.6
Approach			1230	3.0	1230	3.0	0.601	9.4	LOS A	5.7	146.8	0.64	0.54	0.85	32.4
East: Sheldon Road															
1	L2	All MCs	195	3.0	195	3.0	1.037	83.3	LOS F	15.7	400.9	1.00	2.01	4.68	15.4
6	T1	All MCs	223	3.0	223	3.0	1.037	83.3	LOS F	15.7	400.9	1.00	2.01	4.68	15.6
16	R2	All MCs	25	3.0	25	3.0	1.037	90.1	LOS F	15.7	400.9	1.00	2.01	4.68	15.5
Approach			442	3.0	442	3.0	1.037	83.7	LOS F	15.7	400.9	1.00	2.01	4.68	15.5
North: Bradshaw Road															
7	L2	All MCs	31	3.0	31	3.0	0.623	9.8	LOS A	6.4	165.1	0.72	0.65	1.05	31.1
4	T1	All MCs	913	3.0	913	3.0	0.623	9.9	LOS A	6.4	165.1	0.70	0.62	1.00	31.9
14	R2	All MCs	349	3.0	349	3.0	0.315	5.4	LOS A	1.5	37.3	0.51	0.35	0.51	33.4
Approach			1294	3.0	1294	3.0	0.623	8.7	LOS A	6.4	165.1	0.65	0.55	0.87	32.3
West: Sheldon Road															
5	L2	All MCs	289	3.0	289	3.0	0.806	28.1	LOS D	6.6	168.7	0.89	1.20	1.97	24.2
2	T1	All MCs	174	3.0	174	3.0	0.806	28.1	LOS D	6.6	168.7	0.89	1.20	1.97	24.6
12	R2	All MCs	59	3.0	59	3.0	0.806	33.3	LOS D	6.6	168.7	0.89	1.20	1.97	24.5
Approach			523	3.0	523	3.0	0.806	28.7	LOS D	6.6	168.7	0.89	1.20	1.97	24.4
All Vehicles			3488	3.0	3488	3.0	1.037	21.4	LOS C	15.7	400.9	0.73	0.83	1.51	27.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\3_Existing Plus Approved Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: EAP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	137	1.0	137	1.0	0.663	13.8	LOS B	7.5	190.1	0.83	0.83	1.33	29.1
8	T1	All MCs	352	1.0	352	1.0	0.663	13.8	LOS B	7.5	190.1	0.83	0.83	1.33	29.6
18	R2	All MCs	153	1.0	153	1.0	0.663	13.8	LOS B	7.5	190.1	0.83	0.83	1.33	29.4
Approach			641	1.0	641	1.0	0.663	13.8	LOS B	7.5	190.1	0.83	0.83	1.33	29.4
East: Sheldon Road															
1	L2	All MCs	199	1.0	199	1.0	0.818	23.9	LOS C	12.1	305.4	0.99	1.21	2.08	25.7
6	T1	All MCs	471	1.0	471	1.0	0.818	23.9	LOS C	12.1	305.4	0.99	1.21	2.08	26.1
16	R2	All MCs	19	1.0	19	1.0	0.818	23.9	LOS C	12.1	305.4	0.99	1.21	2.08	25.9
Approach			689	1.0	689	1.0	0.818	23.9	LOS C	12.1	305.4	0.99	1.21	2.08	26.0
North: Waterman Road															
7	L2	All MCs	27	1.0	27	1.0	0.708	21.4	LOS C	5.6	141.7	0.85	1.00	1.51	26.8
4	T1	All MCs	425	1.0	425	1.0	0.708	21.4	LOS C	5.6	141.7	0.85	1.00	1.51	27.3
14	R2	All MCs	228	1.0	228	1.0	0.357	10.5	LOS B	1.6	40.4	0.69	0.67	0.79	30.9
Approach			680	1.0	680	1.0	0.708	17.7	LOS C	5.6	141.7	0.80	0.89	1.27	28.3
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	30.8
2	T1	All MCs	320	1.0	320	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.4
12	R2	All MCs	160	1.0	160	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.2
Approach			608	1.0	608	1.0	0.535	9.4	LOS A	4.2	104.7	0.75	0.69	1.02	31.2
All Vehicles			2617	1.0	2617	1.0	0.818	16.5	LOS C	12.1	305.4	0.84	0.91	1.44	28.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\3_Existing Plus Approved Project
\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing Plus Approved Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	702	207	275	800	30	116	209	142	25	183	171
Future Volume (veh/h)	196	702	207	275	800	30	116	209	142	25	183	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	228	816	35	320	930	35	135	243	165	29	213	199
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	945	422	348	1109	42	160	345	234	36	232	217
Arrive On Green	0.14	0.26	0.26	0.19	0.32	0.32	0.09	0.33	0.33	0.02	0.26	0.26
Sat Flow, veh/h	1795	3582	1598	1795	3519	132	1795	1046	710	1795	890	831
Grp Volume(v), veh/h	228	816	35	320	473	492	135	0	408	29	0	412
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1861	1795	0	1757	1795	0	1721
Q Serve(g_s), s	13.3	23.2	1.8	18.7	26.3	26.3	7.9	0.0	21.7	1.7	0.0	24.9
Cycle Q Clear(g_c), s	13.3	23.2	1.8	18.7	26.3	26.3	7.9	0.0	21.7	1.7	0.0	24.9
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.40	1.00		0.48
Lane Grp Cap(c), veh/h	257	945	422	348	565	587	160	0	579	36	0	448
V/C Ratio(X)	0.89	0.86	0.08	0.92	0.84	0.84	0.85	0.00	0.70	0.80	0.00	0.92
Avail Cap(c_a), veh/h	272	945	422	348	565	587	160	0	649	103	0	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.9	37.5	29.6	42.3	34.0	34.0	47.9	0.0	31.3	52.1	0.0	38.4
Incr Delay (d2), s/veh	25.5	10.3	0.4	28.5	13.9	13.4	30.7	0.0	2.3	14.1	0.0	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	11.0	0.7	10.7	12.9	13.4	4.8	0.0	9.1	0.9	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	47.8	30.0	70.7	47.9	47.5	78.6	0.0	33.6	66.2	0.0	53.4
LnGrp LOS	E	D	C	E	D	D	E	A	C	E	A	D
Approach Vol, veh/h	1079			1285			543			441		
Approach Delay, s/veh	52.0			53.4			44.8			54.3		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	39.1	15.0	33.0	25.2	33.6	7.6	40.4				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 16	* 33	9.5	* 36	20.7	28.2	6.1	* 40				
Max Q Clear Time (g_c+l1), s	15.3	28.3	9.9	26.9	20.7	25.2	3.7	23.7				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.6	0.0	0.8	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay 51.7
HCM 6th LOS D

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing Plus Approved Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	550	234	82	571	141	180	301	79	173	364	250
Future Volume (veh/h)	179	550	234	82	571	141	180	301	79	173	364	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	181	556	99	83	577	56	182	304	12	175	368	38
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	391	1494	657	352	1454	648	391	471	209	390	470	210
Arrive On Green	0.11	0.42	0.42	0.10	0.41	0.41	0.11	0.13	0.13	0.11	0.13	0.13
Sat Flow, veh/h	3483	3582	1574	3483	3582	1595	3483	3582	1590	3483	3582	1598
Grp Volume(v), veh/h	181	556	99	83	577	56	182	304	12	175	368	38
Grp Sat Flow(s),veh/h/ln	1742	1791	1574	1742	1791	1595	1742	1791	1590	1742	1791	1598
Q Serve(g_s), s	4.7	10.4	3.8	2.1	11.1	2.1	4.8	7.8	0.6	4.6	9.7	2.1
Cycle Q Clear(g_c), s	4.7	10.4	3.8	2.1	11.1	2.1	4.8	7.8	0.6	4.6	9.7	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	391	1494	657	352	1454	648	391	471	209	390	470	210
V/C Ratio(X)	0.46	0.37	0.15	0.24	0.40	0.09	0.47	0.65	0.06	0.45	0.78	0.18
Avail Cap(c_a), veh/h	412	1494	657	394	1454	648	415	1454	646	405	1443	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	19.6	17.6	40.3	20.5	17.8	40.5	40.1	37.0	40.4	40.9	37.6
Incr Delay (d2), s/veh	0.3	0.7	0.5	0.1	0.8	0.3	0.3	0.6	0.0	0.3	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.2	1.4	0.9	4.5	0.8	2.0	3.3	0.2	1.9	4.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	20.3	18.1	40.4	21.3	18.1	40.8	40.7	37.0	40.7	42.0	37.8
LnGrp LOS	D	C	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h	836			716			498			581		
Approach Delay, s/veh	24.5			23.2			40.6			41.3		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	45.3	16.7	18.6	15.6	46.4	16.7	18.6				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.5	39.5	11.6	39.2	11.0	40.0	11.3	39.5				
Max Q Clear Time (g_c+I1), s	6.7	13.1	6.8	11.7	4.1	12.4	6.6	9.8				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.4	0.0	0.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Approved Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	  	
Traffic Volume (veh/h)	420	398	120	156	564	72	123	667	120	143	782	431
Future Volume (veh/h)	420	398	120	156	564	72	123	667	120	143	782	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	428	25	168	606	12	132	717	129	154	841	278
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	870	388	331	710	315	294	1269	566	297	1829	568
Arrive On Green	0.14	0.24	0.24	0.10	0.20	0.20	0.08	0.36	0.36	0.09	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	3554	1584	3456	5106	1585
Grp Volume(v), veh/h	452	428	25	168	606	12	132	717	129	154	841	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1777	1584	1728	1702	1585
Q Serve(g_s), s	13.4	10.7	1.3	4.8	17.0	0.6	3.8	16.8	5.9	4.4	13.1	14.1
Cycle Q Clear(g_c), s	13.4	10.7	1.3	4.8	17.0	0.6	3.8	16.8	5.9	4.4	13.1	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	870	388	331	710	315	294	1269	566	297	1829	568
V/C Ratio(X)	0.93	0.49	0.06	0.51	0.85	0.04	0.45	0.56	0.23	0.52	0.46	0.49
Avail Cap(c_a), veh/h	487	1558	695	374	1441	640	300	1269	566	300	1829	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	33.6	30.0	44.5	40.0	33.4	45.1	26.8	23.3	45.3	25.5	25.9
Incr Delay (d2), s/veh	23.8	0.2	0.0	0.4	1.2	0.0	0.4	1.8	0.9	0.7	0.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	4.5	0.5	2.0	7.3	0.2	1.6	7.0	2.3	1.9	5.1	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	33.7	30.0	45.0	41.1	33.4	45.5	28.6	24.2	46.0	26.4	28.9
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h	905		786				978		1273			
Approach Delay, s/veh	50.6		41.8				30.3		29.3			
Approach LOS	D		D				C		C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	42.9	20.0	26.1	14.7	42.8	15.3	30.8				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	11.2	45.4				
Max Q Clear Time (g_c+I1), s	5.8	16.1	15.4	19.0	6.4	18.8	6.8	12.7				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			37.0									
HCM 6th LOS			D									
Notes												
User approved ignoring U-Turning movement.												

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: EAP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] veh ft		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Bradshaw Road															
3	L2	All MCs	39	3.0	39	3.0	0.576	11.4	LOS B	4.6	118.7	0.73	0.70	1.07	30.4
8	T1	All MCs	651	3.0	651	3.0	0.576	11.3	LOS B	4.6	118.7	0.69	0.65	0.97	31.4
18	R2	All MCs	149	3.0	149	3.0	0.291	6.7	LOS A	1.2	31.9	0.56	0.44	0.56	32.9
Approach			839	3.0	839	3.0	0.576	10.5	LOS B	4.6	118.7	0.67	0.61	0.90	31.6
East: Sheldon Road															
1	L2	All MCs	67	3.0	67	3.0	0.962	70.6	LOS F	11.6	296.5	0.98	1.60	3.18	16.9
6	T1	All MCs	249	3.0	249	3.0	0.962	70.6	LOS F	11.6	296.5	0.98	1.60	3.18	17.1
16	R2	All MCs	30	3.0	30	3.0	0.962	75.0	LOS F	11.6	296.5	0.98	1.60	3.18	17.1
Approach			346	3.0	346	3.0	0.962	71.0	LOS F	11.6	296.5	0.98	1.60	3.18	17.1
North: Bradshaw Road															
7	L2	All MCs	39	3.0	39	3.0	0.614	9.4	LOS A	6.3	162.3	0.67	0.53	0.88	31.3
4	T1	All MCs	890	3.0	890	3.0	0.614	9.4	LOS A	6.3	162.3	0.65	0.51	0.86	32.0
14	R2	All MCs	392	3.0	392	3.0	0.311	5.2	LOS A	1.5	37.9	0.46	0.29	0.46	33.5
Approach			1321	3.0	1321	3.0	0.614	8.2	LOS A	6.3	162.3	0.60	0.45	0.74	32.4
West: Sheldon Road															
5	L2	All MCs	192	3.0	192	3.0	0.764	23.4	LOS C	6.2	159.8	0.87	1.11	1.79	25.8
2	T1	All MCs	293	3.0	293	3.0	0.764	23.4	LOS C	6.2	159.8	0.87	1.11	1.79	26.2
12	R2	All MCs	47	3.0	47	3.0	0.764	27.8	LOS D	6.2	159.8	0.87	1.11	1.79	26.0
Approach			532	3.0	532	3.0	0.764	23.8	LOS C	6.2	159.8	0.87	1.11	1.79	26.0
All Vehicles			3038	3.0	3038	3.0	0.962	18.7	LOS C	11.6	296.5	0.71	0.74	1.25	28.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\3_Existing Plus Approved Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: EAPPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	223	2.0	223	2.0	0.679	12.7	LOS B	8.3	211.4	0.84	0.82	1.34	29.3
8	T1	All MCs	386	2.0	386	2.0	0.679	12.7	LOS B	8.3	211.4	0.84	0.82	1.34	29.9
18	R2	All MCs	173	2.0	173	2.0	0.679	12.7	LOS B	8.3	211.4	0.84	0.82	1.34	29.7
Approach			782	2.0	782	2.0	0.679	12.7	LOS B	8.3	211.4	0.84	0.82	1.34	29.7
East: Sheldon Road															
1	L2	All MCs	188	2.0	188	2.0	1.126	95.7	LOS F	41.5	1053.4	1.00	2.75	6.30	14.2
6	T1	All MCs	511	2.0	511	2.0	1.126	95.7	LOS F	41.5	1053.4	1.00	2.75	6.30	14.4
16	R2	All MCs	54	2.0	54	2.0	1.126	95.7	LOS F	41.5	1053.4	1.00	2.75	6.30	14.3
Approach			753	2.0	753	2.0	1.126	95.7	LOS F	41.5	1053.4	1.00	2.75	6.30	14.3
North: Waterman Road															
7	L2	All MCs	38	2.0	38	2.0	0.841	33.4	LOS D	8.7	220.8	0.93	1.25	2.11	23.4
4	T1	All MCs	464	2.0	464	2.0	0.841	33.4	LOS D	8.7	220.8	0.93	1.25	2.11	23.8
14	R2	All MCs	205	2.0	205	2.0	0.344	10.8	LOS B	1.5	37.2	0.69	0.69	0.79	30.8
Approach			707	2.0	707	2.0	0.841	26.9	LOS D	8.7	220.8	0.86	1.09	1.73	25.4
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.743	19.3	LOS C	8.2	207.4	0.91	1.05	1.69	27.1
2	T1	All MCs	311	2.0	311	2.0	0.743	19.3	LOS C	8.2	207.4	0.91	1.05	1.69	27.6
12	R2	All MCs	157	2.0	157	2.0	0.743	19.3	LOS C	8.2	207.4	0.91	1.05	1.69	27.4
Approach			608	2.0	608	2.0	0.743	19.3	LOS C	8.2	207.4	0.91	1.05	1.69	27.4
All Vehicles			2851	2.0	2851	2.0	1.126	39.5	LOS E	41.5	1053.4	0.90	1.45	2.82	22.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\4_Existing Plus Approved Project Plus Project\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary 2: Waterman Rd & Calvin Rd

Existing Plus Approved Project Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	957	174	273	1015	36	120	164	270	68	265	214
Future Volume (veh/h)	236	957	174	273	1015	36	120	164	270	68	265	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	1040	78	297	1103	39	130	178	293	74	288	233
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	1136	504	303	1184	42	138	192	316	93	268	217
Arrive On Green	0.15	0.32	0.32	0.17	0.34	0.34	0.08	0.31	0.31	0.05	0.28	0.28
Sat Flow, veh/h	1781	3554	1575	1781	3501	124	1781	628	1034	1781	956	773
Grp Volume(v), veh/h	257	1040	78	297	560	582	130	0	471	74	0	521
Grp Sat Flow(s),veh/h/ln	1781	1777	1575	1781	1777	1848	1781	0	1663	1781	0	1729
Q Serve(g_s), s	19.4	38.1	4.8	22.5	41.2	41.2	9.8	0.0	37.1	5.6	0.0	38.0
Cycle Q Clear(g_c), s	19.4	38.1	4.8	22.5	41.2	41.2	9.8	0.0	37.1	5.6	0.0	38.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.62	1.00		0.45
Lane Grp Cap(c), veh/h	271	1136	504	303	601	625	138	0	508	93	0	485
V/C Ratio(X)	0.95	0.92	0.15	0.98	0.93	0.93	0.94	0.00	0.93	0.79	0.00	1.07
Avail Cap(c_a), veh/h	271	1136	504	303	601	625	138	0	510	93	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.9	44.3	33.0	56.0	43.3	43.3	62.1	0.0	45.5	63.4	0.0	48.7
Incr Delay (d2), s/veh	40.3	12.8	0.7	46.4	23.2	22.6	58.1	0.0	22.7	33.5	0.0	62.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	18.2	1.9	13.8	21.3	22.1	6.6	0.0	18.0	3.3	0.0	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.2	57.1	33.6	102.4	66.5	65.9	120.3	0.0	68.2	97.0	0.0	110.7
LnGrp LOS	F	E	C	F	E	E	F	A	E	F	A	F
Approach Vol, veh/h	1375			1439			601			595		
Approach Delay, s/veh	63.2			73.7			79.5			109.0		
Approach LOS	E			E			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	51.2	16.0	43.2	27.5	48.7	12.6	46.6				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 21	* 46	10.5	* 38	23.0	42.9	7.1	* 42				
Max Q Clear Time (g_c+I1), s	21.4	43.2	11.8	40.0	24.5	40.1	7.6	39.1				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	1.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay 76.2

HCM 6th LOS E

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: Waterman Rd & Bond Rd

Existing Plus Approved Project Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	531	321	54	631	213	407	290	51	239	372	249
Future Volume (veh/h)	246	531	321	54	631	213	407	290	51	239	372	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	632	109	64	751	66	485	345	1	285	443	83
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	1427	635	315	1363	608	453	596	262	377	518	231
Arrive On Green	0.11	0.40	0.40	0.09	0.38	0.38	0.13	0.17	0.17	0.11	0.15	0.15
Sat Flow, veh/h	3456	3554	1581	3456	3554	1585	3456	3554	1564	3456	3554	1585
Grp Volume(v), veh/h	293	632	109	64	751	66	485	345	1	285	443	83
Grp Sat Flow(s),veh/h/ln	1728	1777	1581	1728	1777	1585	1728	1777	1564	1728	1777	1585
Q Serve(g_s), s	8.3	13.0	4.5	1.7	16.6	2.7	13.2	9.0	0.1	8.1	12.2	4.8
Cycle Q Clear(g_c), s	8.3	13.0	4.5	1.7	16.6	2.7	13.2	9.0	0.1	8.1	12.2	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	378	1427	635	315	1363	608	453	596	262	377	518	231
V/C Ratio(X)	0.78	0.44	0.17	0.20	0.55	0.11	1.07	0.58	0.00	0.75	0.86	0.36
Avail Cap(c_a), veh/h	378	1427	635	378	1363	608	453	1370	603	460	1377	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	21.9	19.4	42.4	24.3	20.0	43.7	38.6	34.9	43.5	42.0	38.8
Incr Delay (d2), s/veh	8.9	1.0	0.6	0.1	1.6	0.4	62.3	0.3	0.0	4.2	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.3	1.6	0.7	6.8	1.0	9.3	3.8	0.0	3.5	5.3	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	22.9	19.9	42.5	25.9	20.3	106.1	39.0	34.9	47.8	43.6	39.1
LnGrp LOS	D	C	B	D	C	C	F	D	C	D	D	D
Approach Vol, veh/h	1034			881			831			811		
Approach Delay, s/veh	31.0			26.7			78.1			44.6		
Approach LOS	C			C			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.4	19.0	20.5	15.0	46.2	16.8	22.7				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	13.4	38.8				
Max Q Clear Time (g_c+I1), s	10.3	18.6	15.2	14.2	3.7	15.0	10.1	11.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.4	0.0	0.6	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Approved Project Plus Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	411	347	133	199	597	154	118	657	78	166	769	454
Future Volume (veh/h)	411	347	133	199	597	154	118	657	78	166	769	454
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	447	377	29	216	649	34	128	714	85	180	836	291
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	479	880	393	328	724	323	288	1249	557	294	1804	560
Arrive On Green	0.14	0.25	0.25	0.10	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	447	377	29	216	649	34	128	714	85	180	836	291
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1763	1572	1714	1689	1572
Q Serve(g_s), s	13.5	9.4	1.5	6.3	18.7	1.8	3.7	17.1	3.9	5.3	13.3	15.3
Cycle Q Clear(g_c), s	13.5	9.4	1.5	6.3	18.7	1.8	3.7	17.1	3.9	5.3	13.3	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	880	393	328	724	323	288	1249	557	294	1804	560
V/C Ratio(X)	0.93	0.43	0.07	0.66	0.90	0.11	0.44	0.57	0.15	0.61	0.46	0.52
Avail Cap(c_a), veh/h	479	1449	646	450	1418	633	296	1249	557	296	1804	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	32.9	29.9	45.6	40.4	33.7	45.5	27.3	23.0	46.1	25.9	26.6
Incr Delay (d2), s/veh	24.9	0.1	0.0	0.8	1.7	0.1	0.4	1.9	0.6	2.7	0.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	3.9	0.5	2.7	8.0	0.7	1.5	7.1	1.5	2.3	5.2	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	33.0	30.0	46.4	42.0	33.7	45.9	29.2	23.6	48.7	26.8	30.0
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h	853			899			927			1307		
Approach Delay, s/veh	51.9			42.8			31.0			30.5		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	43.0	20.0	26.9	14.8	42.8	15.4	31.5				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	13.7	42.9				
Max Q Clear Time (g_c+I1), s	5.7	17.3	15.5	20.7	7.3	19.1	8.3	11.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: EAPPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.614	9.9	LOS A	6.0	152.7	0.72	0.67	1.07	31.0
8	T1	All MCs	991	3.0	991	3.0	0.614	10.5	LOS B	6.0	152.7	0.68	0.60	0.94	32.1
18	R2	All MCs	168	3.0	168	3.0	0.310	5.4	LOS A	1.4	36.0	0.53	0.38	0.53	33.5
Approach			1230	3.0	1230	3.0	0.614	9.8	LOS A	6.0	152.7	0.66	0.57	0.89	32.2
East: Sheldon Road															
1	L2	All MCs	195	3.0	195	3.0	1.059	90.3	LOS F	17.3	443.4	1.00	2.12	5.10	14.7
6	T1	All MCs	224	3.0	224	3.0	1.059	90.3	LOS F	17.3	443.4	1.00	2.12	5.10	14.9
16	R2	All MCs	25	3.0	25	3.0	1.059	97.2	LOS F	17.3	443.4	1.00	2.12	5.10	14.8
Approach			443	3.0	443	3.0	1.059	90.7	LOS F	17.3	443.4	1.00	2.12	5.10	14.8
North: Bradshaw Road															
7	L2	All MCs	31	3.0	31	3.0	0.621	9.8	LOS A	6.4	164.4	0.71	0.64	1.04	31.2
4	T1	All MCs	913	3.0	913	3.0	0.621	9.8	LOS A	6.4	164.4	0.69	0.61	0.99	32.0
14	R2	All MCs	353	3.0	353	3.0	0.314	5.3	LOS A	1.5	37.2	0.51	0.35	0.51	33.4
Approach			1297	3.0	1297	3.0	0.621	8.6	LOS A	6.4	164.4	0.64	0.54	0.86	32.3
West: Sheldon Road															
5	L2	All MCs	309	3.0	309	3.0	0.849	32.4	LOS D	7.9	203.3	0.91	1.30	2.26	23.2
2	T1	All MCs	183	3.0	183	3.0	0.849	32.4	LOS D	7.9	203.3	0.91	1.30	2.26	23.5
12	R2	All MCs	61	3.0	61	3.0	0.849	37.7	LOS E	7.9	203.3	0.91	1.30	2.26	23.4
Approach			553	3.0	553	3.0	0.849	33.0	LOS D	7.9	203.3	0.91	1.30	2.26	23.3
All Vehicles			3523	3.0	3523	3.0	1.059	23.2	LOS C	17.3	443.4	0.74	0.87	1.62	26.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\4_Existing Plus Approved Project Plus Project\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: EAPPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: Waterman Road															
3	L2	All MCs	140	1.0	140	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	27.5
8	T1	All MCs	355	1.0	355	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	28.0
18	R2	All MCs	168	1.0	168	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	27.8
Approach			662	1.0	662	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	27.9
East: Sheldon Road															
1	L2	All MCs	206	1.0	206	1.0	0.871	29.1	LOS D	15.2	383.3	1.00	1.37	2.41	24.3
6	T1	All MCs	492	1.0	492	1.0	0.871	29.1	LOS D	15.2	383.3	1.00	1.37	2.41	24.6
16	R2	All MCs	30	1.0	30	1.0	0.871	29.1	LOS D	15.2	383.3	1.00	1.37	2.41	24.5
Approach			729	1.0	729	1.0	0.871	29.1	LOS D	15.2	383.3	1.00	1.37	2.41	24.5
North: Waterman Road															
7	L2	All MCs	55	1.0	55	1.0	0.791	27.8	LOS D	7.3	184.0	0.90	1.14	1.81	24.9
4	T1	All MCs	434	1.0	434	1.0	0.791	27.8	LOS D	7.3	184.0	0.90	1.14	1.81	25.3
14	R2	All MCs	228	1.0	228	1.0	0.369	11.0	LOS B	1.7	41.9	0.70	0.70	0.82	30.7
Approach			717	1.0	717	1.0	0.791	22.4	LOS C	7.3	184.0	0.84	1.00	1.50	26.7
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.1
2	T1	All MCs	377	1.0	377	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.6
12	R2	All MCs	170	1.0	170	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.4
Approach			674	1.0	674	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.5
All Vehicles			2783	1.0	2783	1.0	0.871	20.5	LOS C	15.2	383.3	0.89	1.05	1.72	27.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\4_Existing Plus Approved Project Plus Project\Summer_Villas.sip9

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

Existing Plus Approved Project Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	702	216	277	800	30	119	219	143	25	209	171
Future Volume (veh/h)	196	702	216	277	800	30	119	219	143	25	209	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	228	816	32	322	930	35	138	255	166	29	243	199
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	907	405	349	1076	40	157	365	238	36	262	214
Arrive On Green	0.14	0.25	0.25	0.19	0.31	0.31	0.09	0.34	0.34	0.02	0.27	0.27
Sat Flow, veh/h	1795	3582	1598	1795	3519	132	1795	1066	694	1795	952	779
Grp Volume(v), veh/h	228	816	32	322	473	492	138	0	421	29	0	442
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1795	1791	1861	1795	0	1760	1795	0	1731
Q Serve(g_s), s	13.5	23.9	1.7	19.1	27.1	27.1	8.3	0.0	22.5	1.7	0.0	27.0
Cycle Q Clear(g_c), s	13.5	23.9	1.7	19.1	27.1	27.1	8.3	0.0	22.5	1.7	0.0	27.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.39	1.00		0.45
Lane Grp Cap(c), veh/h	257	907	405	349	548	569	157	0	602	36	0	476
V/C Ratio(X)	0.89	0.90	0.08	0.92	0.86	0.86	0.88	0.00	0.70	0.80	0.00	0.93
Avail Cap(c_a), veh/h	268	907	405	355	548	569	157	0	640	101	0	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.7	39.2	30.9	42.9	35.6	35.6	49.0	0.0	30.9	53.0	0.0	38.3
Incr Delay (d2), s/veh	26.5	13.6	0.4	28.0	16.5	16.0	38.0	0.0	2.5	14.0	0.0	18.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	11.7	0.7	10.9	13.7	14.1	5.2	0.0	9.4	0.9	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	52.8	31.3	70.9	52.1	51.5	87.0	0.0	33.4	67.0	0.0	56.5
LnGrp LOS	E	D	C	E	D	D	F	A	C	E	A	E
Approach Vol, veh/h	1076			1287			559			471		
Approach Delay, s/veh	56.3			56.6			46.6			57.1		
Approach LOS	E			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.9	38.6	15.0	35.1	25.6	32.9	7.7	42.4				
Change Period (Y+Rc), s	* 4.4	* 5.4	5.5	* 5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	* 16	* 33	9.5	* 36	21.5	27.4	6.1	* 40				
Max Q Clear Time (g_c+l1), s	15.5	29.1	10.3	29.0	21.1	25.9	3.7	24.5				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6	0.0	0.4	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay 54.9
HCM 6th LOS D

Notes

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 3: Waterman Rd & Bond Rd

Existing Plus Approved Project Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	550	234	82	571	141	180	327	79	176	371	261
Future Volume (veh/h)	207	550	234	82	571	141	180	327	79	176	371	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	209	556	99	83	577	55	182	330	12	178	375	41
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	393	1483	652	353	1442	642	392	477	212	391	477	213
Arrive On Green	0.11	0.41	0.41	0.10	0.40	0.40	0.11	0.13	0.13	0.11	0.13	0.13
Sat Flow, veh/h	3483	3582	1574	3483	3582	1595	3483	3582	1590	3483	3582	1598
Grp Volume(v), veh/h	209	556	99	83	577	55	182	330	12	178	375	41
Grp Sat Flow(s),veh/h/ln	1742	1791	1574	1742	1791	1595	1742	1791	1590	1742	1791	1598
Q Serve(g_s), s	5.5	10.4	3.8	2.1	11.1	2.1	4.7	8.5	0.6	4.6	9.8	2.2
Cycle Q Clear(g_c), s	5.5	10.4	3.8	2.1	11.1	2.1	4.7	8.5	0.6	4.6	9.8	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	1483	652	353	1442	642	392	477	212	391	477	213
V/C Ratio(X)	0.53	0.37	0.15	0.24	0.40	0.09	0.46	0.69	0.06	0.45	0.79	0.19
Avail Cap(c_a), veh/h	463	1483	652	395	1442	642	416	1446	642	409	1439	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	19.7	17.8	40.2	20.7	17.9	40.3	40.2	36.7	40.3	40.7	37.4
Incr Delay (d2), s/veh	0.4	0.7	0.5	0.1	0.8	0.3	0.3	0.7	0.0	0.3	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.2	1.4	0.9	4.5	0.8	2.0	3.6	0.2	1.9	4.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	20.4	18.3	40.3	21.5	18.2	40.7	40.8	36.8	40.6	41.8	37.6
LnGrp LOS	D	C	B	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		864			715			524			594	
Approach Delay, s/veh		25.2			23.4			40.7			41.2	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.9	16.7	18.7	15.6	46.0	16.7	18.7				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	12.9	38.3	11.6	39.0	11.0	40.2	11.4	39.2				
Max Q Clear Time (g_c+I1), s	7.5	13.1	6.7	11.8	4.1	12.4	6.6	10.5				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.4	0.0	0.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Existing Plus Approved Project Plus Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	452	120	158	585	73	123	667	125	145	782	431
Future Volume (veh/h)	420	452	120	158	585	73	123	667	125	145	782	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	452	486	27	170	629	12	132	717	134	156	841	277
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	890	397	329	731	325	291	1260	561	295	1815	563
Arrive On Green	0.14	0.25	0.25	0.10	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	3554	1584	3456	5106	1585
Grp Volume(v), veh/h	452	486	27	170	629	12	132	717	134	156	841	277
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1777	1584	1728	1702	1585
Q Serve(g_s), s	13.5	12.4	1.4	4.9	17.8	0.6	3.8	17.0	6.2	4.5	13.3	14.2
Cycle Q Clear(g_c), s	13.5	12.4	1.4	4.9	17.8	0.6	3.8	17.0	6.2	4.5	13.3	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	890	397	329	731	325	291	1260	561	295	1815	563
V/C Ratio(X)	0.94	0.55	0.07	0.52	0.86	0.04	0.45	0.57	0.24	0.53	0.46	0.49
Avail Cap(c_a), veh/h	483	1546	689	371	1430	635	298	1260	561	298	1815	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	34.0	29.8	44.9	40.0	33.2	45.5	27.2	23.8	45.7	26.0	26.3
Incr Delay (d2), s/veh	25.3	0.2	0.0	0.5	1.2	0.0	0.4	1.9	1.0	0.8	0.9	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.2	0.5	2.1	7.6	0.2	1.6	7.1	2.4	1.9	5.2	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	34.2	29.8	45.4	41.2	33.2	45.9	29.1	24.8	46.6	26.8	29.3
LnGrp LOS	E	C	C	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h	965			811			983			1274		
Approach Delay, s/veh	50.7			42.0			30.8			29.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	42.9	20.0	26.9	14.7	42.8	15.3	31.6				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	37.0	14.6	42.0	9.0	37.0	11.2	45.4				
Max Q Clear Time (g_c+I1), s	5.8	16.2	15.5	19.8	6.5	19.0	6.9	14.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	0.7	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay				37.5								
HCM 6th LOS				D								
Notes												

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: EAPPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	41	3.0	41	3.0	0.583	11.7	LOS B	4.7	121.2	0.73	0.72	1.10	30.3
8	T1	All MCs	651	3.0	651	3.0	0.583	11.6	LOS B	4.7	121.2	0.70	0.66	0.99	31.3
18	R2	All MCs	149	3.0	149	3.0	0.295	6.8	LOS A	1.3	32.2	0.57	0.45	0.57	32.8
Approach			841	3.0	841	3.0	0.583	10.7	LOS B	4.7	121.2	0.68	0.63	0.92	31.5
East: Sheldon Road															
1	L2	All MCs	67	3.0	67	3.0	0.996	79.1	LOS F	13.5	344.7	1.00	1.72	3.56	15.9
6	T1	All MCs	257	3.0	257	3.0	0.996	79.1	LOS F	13.5	344.7	1.00	1.72	3.56	16.1
16	R2	All MCs	30	3.0	30	3.0	0.996	83.5	LOS F	13.5	344.7	1.00	1.72	3.56	16.1
Approach			354	3.0	354	3.0	0.996	79.5	LOS F	13.5	344.7	1.00	1.72	3.56	16.1
North: Bradshaw Road															
7	L2	All MCs	39	3.0	39	3.0	0.628	9.7	LOS A	6.9	175.7	0.68	0.56	0.95	31.2
4	T1	All MCs	890	3.0	890	3.0	0.628	9.7	LOS A	6.9	175.7	0.67	0.55	0.92	31.9
14	R2	All MCs	410	3.0	410	3.0	0.318	5.3	LOS A	1.5	38.9	0.47	0.30	0.47	33.4
Approach			1339	3.0	1339	3.0	0.628	8.4	LOS A	6.9	175.7	0.61	0.48	0.78	32.3
West: Sheldon Road															
5	L2	All MCs	199	3.0	199	3.0	0.781	24.6	LOS C	6.6	168.4	0.88	1.14	1.84	25.4
2	T1	All MCs	297	3.0	297	3.0	0.781	24.6	LOS C	6.6	168.4	0.88	1.14	1.84	25.8
12	R2	All MCs	48	3.0	48	3.0	0.781	28.9	LOS D	6.6	168.4	0.88	1.14	1.84	25.7
Approach			544	3.0	544	3.0	0.781	25.0	LOS C	6.6	168.4	0.88	1.14	1.84	25.7
All Vehicles			3078	3.0	3078	3.0	0.996	20.1	LOS C	13.5	344.7	0.72	0.78	1.33	27.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\4_Existing Plus Approved Project Plus Project\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: CNP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	211	2.0	211	2.0	0.876	24.4	LOS C	19.5	496.0	1.00	1.37	2.38	25.6
8	T1	All MCs	589	2.0	589	2.0	0.876	24.4	LOS C	19.5	496.0	1.00	1.37	2.38	26.0
18	R2	All MCs	168	2.0	168	2.0	0.876	24.4	LOS C	19.5	496.0	1.00	1.37	2.38	25.8
Approach			968	2.0	968	2.0	0.876	24.4	LOS C	19.5	496.0	1.00	1.37	2.38	25.9
East: Sheldon Road															
1	L2	All MCs	189	2.0	189	2.0	1.566	281.1	LOS F	103.3	2625.0	1.00	4.95	13.91	6.6
6	T1	All MCs	600	2.0	600	2.0	1.566	281.1	LOS F	103.3	2625.0	1.00	4.95	13.91	6.6
16	R2	All MCs	63	2.0	63	2.0	1.566	281.1	LOS F	103.3	2625.0	1.00	4.95	13.91	6.6
Approach			853	2.0	853	2.0	1.566	281.1	LOS F	103.3	2625.0	1.00	4.95	13.91	6.6
North: Waterman Road															
7	L2	All MCs	42	2.0	42	2.0	0.962	48.8	LOS E	18.9	480.1	1.00	1.74	3.35	20.3
4	T1	All MCs	611	2.0	611	2.0	0.962	48.8	LOS E	18.9	480.1	1.00	1.74	3.35	20.5
14	R2	All MCs	211	2.0	211	2.0	0.310	9.2	LOS A	1.3	32.6	0.65	0.59	0.67	31.5
Approach			863	2.0	863	2.0	0.962	39.1	LOS E	18.9	480.1	0.92	1.46	2.70	22.4
West: Sheldon Road															
5	L2	All MCs	147	2.0	147	2.0	0.959	45.7	LOS E	19.2	487.1	1.00	1.72	3.26	20.6
2	T1	All MCs	347	2.0	347	2.0	0.959	45.7	LOS E	19.2	487.1	1.00	1.72	3.26	20.9
12	R2	All MCs	221	2.0	221	2.0	0.959	45.7	LOS E	19.2	487.1	1.00	1.72	3.26	20.8
Approach			716	2.0	716	2.0	0.959	45.7	LOS E	19.2	487.1	1.00	1.72	3.26	20.8
All Vehicles			3400	2.0	3400	2.0	1.566	97.0	LOS F	103.3	2625.0	0.98	2.37	5.54	14.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\5_Cumulative No Project
\Summer_Villas_CNP.sip9

HCM 6th Signalized Intersection Summary 2: Waterman Rd & Calvin Rd

Cumulative No Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	485	960	170	285	1430	230	150	600	270	90	490	430
Future Volume (veh/h)	485	960	170	285	1430	230	150	600	270	90	490	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	527	1043	92	310	1554	250	163	652	293	98	533	467
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	513	1629	724	356	1469	654	171	910	399	142	880	391
Arrive On Green	0.15	0.46	0.46	0.10	0.41	0.41	0.05	0.26	0.26	0.04	0.25	0.25
Sat Flow, veh/h	3456	3554	1581	3456	3554	1583	3456	3554	1556	3456	3554	1581
Grp Volume(v), veh/h	527	1043	92	310	1554	250	163	652	293	98	533	467
Grp Sat Flow(s),veh/h/ln	1728	1777	1581	1728	1777	1583	1728	1777	1556	1728	1777	1581
Q Serve(g_s), s	21.6	32.7	4.9	12.9	60.1	16.0	6.8	24.3	25.1	4.1	19.3	36.0
Cycle Q Clear(g_c), s	21.6	32.7	4.9	12.9	60.1	16.0	6.8	24.3	25.1	4.1	19.3	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	513	1629	724	356	1469	654	171	910	399	142	880	391
V/C Ratio(X)	1.03	0.64	0.13	0.87	1.06	0.38	0.95	0.72	0.74	0.69	0.61	1.19
Avail Cap(c_a), veh/h	513	1629	724	475	1469	654	171	910	399	152	880	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	30.2	22.7	64.3	42.6	29.7	68.9	49.3	49.6	68.8	48.4	54.7
Incr Delay (d2), s/veh	46.7	1.9	0.4	10.5	40.5	1.7	54.4	2.3	6.1	9.3	0.9	109.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	14.0	1.9	6.1	33.4	6.3	4.3	10.9	10.2	2.0	8.5	25.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	108.6	32.1	23.0	74.7	83.1	31.4	123.3	51.6	55.7	78.1	49.3	164.1
LnGrp LOS	F	C	C	E	F	C	F	D	E	E	D	F
Approach Vol, veh/h		1662			2114			1108			1098	
Approach Delay, s/veh		55.9			75.8			63.2			100.7	
Approach LOS		E			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	65.5	12.7	41.2	19.5	72.0	11.5	42.4				
Change Period (Y+Rc), s	4.4	* 5.4	5.5	5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	21.6	* 60	7.2	36.0	20.0	61.2	6.4	* 37				
Max Q Clear Time (g_c+I1), s	23.6	62.1	8.8	38.0	14.9	34.7	6.1	27.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	2.5	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			72.5									
HCM 6th LOS			E									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary 3: Waterman Rd & Bond Rd

Cumulative No Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	480	500	120	610	210	530	530	100	215	700	220
Future Volume (veh/h)	240	480	500	120	610	210	530	530	100	215	700	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	286	571	334	143	726	42	631	631	25	256	833	106
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1063	473	283	1011	451	674	1268	559	305	888	396
Arrive On Green	0.10	0.30	0.30	0.08	0.28	0.28	0.20	0.36	0.36	0.09	0.25	0.25
Sat Flow, veh/h	3456	3554	1580	3456	3554	1585	3456	3554	1565	3456	3554	1585
Grp Volume(v), veh/h	286	571	334	143	726	42	631	631	25	256	833	106
Grp Sat Flow(s),veh/h/ln	1728	1777	1580	1728	1777	1585	1728	1777	1565	1728	1777	1585
Q Serve(g_s), s	10.9	17.9	25.1	5.3	24.5	2.6	24.0	18.5	1.4	9.7	30.7	7.2
Cycle Q Clear(g_c), s	10.9	17.9	25.1	5.3	24.5	2.6	24.0	18.5	1.4	9.7	30.7	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	1063	473	283	1011	451	674	1268	559	305	888	396
V/C Ratio(X)	0.86	0.54	0.71	0.50	0.72	0.09	0.94	0.50	0.04	0.84	0.94	0.27
Avail Cap(c_a), veh/h	399	1063	473	362	1011	451	756	1268	559	562	1038	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	39.1	41.6	58.7	42.9	35.1	52.9	33.6	28.1	59.9	49.1	40.3
Incr Delay (d2), s/veh	12.9	1.9	8.6	0.5	4.4	0.4	17.0	0.1	0.0	2.4	13.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	7.9	10.6	2.3	11.1	1.0	11.7	7.8	0.5	4.3	14.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	72.3	41.0	50.2	59.2	47.3	35.5	69.9	33.7	28.1	62.4	62.3	40.4
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	E	D
Approach Vol, veh/h		1191			911			1287			1195	
Approach Delay, s/veh		51.1			48.6			51.3			60.4	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.7	43.8	31.9	39.2	16.7	45.8	17.6	53.4				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	15.4	38.0	29.2	39.0	14.0	39.4	21.7	46.5				
Max Q Clear Time (g_c+I1), s	12.9	26.5	26.0	32.7	7.3	27.1	11.7	20.5				
Green Ext Time (p_c), s	0.0	0.7	0.1	0.7	0.0	0.5	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			53.1									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Cumulative No Project AM
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  				
Traffic Volume (veh/h)	542	340	140	210	630	170	100	1130	80	180	1040	600
Future Volume (veh/h)	542	340	140	210	630	170	100	1130	80	180	1040	600
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	589	370	36	228	685	61	109	1228	87	196	1130	478
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	620	1097	489	277	745	332	232	1862	578	236	1869	580
Arrive On Green	0.18	0.31	0.31	0.08	0.21	0.21	0.07	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	5066	1572	3428	5066	1572
Grp Volume(v), veh/h	589	370	36	228	685	61	109	1228	87	196	1130	478
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1689	1572	1714	1689	1572
Q Serve(g_s), s	22.2	10.5	2.1	8.6	24.8	4.2	4.0	26.4	4.8	7.4	23.7	36.0
Cycle Q Clear(g_c), s	22.2	10.5	2.1	8.6	24.8	4.2	4.0	26.4	4.8	7.4	23.7	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	620	1097	489	277	745	332	232	1862	578	236	1869	580
V/C Ratio(X)	0.95	0.34	0.07	0.82	0.92	0.18	0.47	0.66	0.15	0.83	0.60	0.82
Avail Cap(c_a), veh/h	620	1344	600	415	1134	506	236	1862	578	236	1869	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	34.6	31.7	59.1	50.4	42.3	58.6	34.5	27.6	60.0	33.5	37.4
Incr Delay (d2), s/veh	24.3	0.1	0.0	4.8	6.4	0.1	0.6	1.9	0.6	20.2	1.5	12.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	4.5	0.8	3.9	11.4	1.6	1.7	10.8	1.9	3.8	9.6	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.2	34.7	31.7	63.9	56.8	42.4	59.2	36.3	28.2	80.2	34.9	49.9
LnGrp LOS	E	C	C	E	E	D	E	D	C	F	C	D
Approach Vol, veh/h	995			974			1424			1804		
Approach Delay, s/veh	59.8			57.6			37.6			43.8		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	54.0	29.0	33.0	14.8	53.8	16.0	46.0				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	48.0	23.6	42.0	9.0	48.0	15.8	49.8				
Max Q Clear Time (g_c+I1), s	6.0	38.0	24.2	26.8	9.4	28.4	10.6	12.5				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.8	0.0	1.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	47.7											
HCM 6th LOS	D											

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: CNP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	226	3.0	226	3.0	0.691	11.3	LOS B	9.3	238.4	0.78	0.74	1.26	30.1
8	T1	All MCs	1548	3.0	1548	3.0	0.691	11.3	LOS B	9.3	238.4	0.78	0.74	1.26	30.9
18	R2	All MCs	183	3.0	183	3.0	0.691	11.3	LOS B	9.3	238.4	0.78	0.74	1.26	30.9
Approach			1957	3.0	1957	3.0	0.691	11.3	LOS B	9.3	238.4	0.78	0.74	1.26	30.8
East: Sheldon Road															
1	L2	All MCs	215	3.0	215	3.0	1.847	425.5	LOS F	71.2	1823.0	1.00	4.26	14.25	4.7
6	T1	All MCs	226	3.0	226	3.0	1.847	425.5	LOS F	71.2	1823.0	1.00	4.26	14.25	4.7
16	R2	All MCs	32	3.0	32	3.0	1.847	431.0	LOS F	71.2	1823.0	1.00	4.26	14.25	4.7
Approach			473	3.0	473	3.0	1.847	425.8	LOS F	71.2	1823.0	1.00	4.26	14.25	4.7
North: Bradshaw Road															
7	L2	All MCs	48	3.0	48	3.0	0.660	10.6	LOS B	8.0	204.8	0.75	0.71	1.18	30.8
4	T1	All MCs	1333	3.0	1333	3.0	0.660	10.6	LOS B	8.0	204.8	0.75	0.71	1.18	31.4
14	R2	All MCs	462	3.0	462	3.0	0.660	10.6	LOS B	8.0	204.8	0.75	0.71	1.18	31.1
Approach			1844	3.0	1844	3.0	0.660	10.6	LOS B	8.0	204.8	0.75	0.71	1.18	31.3
West: Sheldon Road															
5	L2	All MCs	290	3.0	290	3.0	1.195	131.9	LOS F	35.7	913.2	1.00	3.18	8.91	11.6
2	T1	All MCs	183	3.0	183	3.0	1.195	131.9	LOS F	35.7	913.2	1.00	3.18	8.91	11.7
12	R2	All MCs	97	3.0	97	3.0	1.195	131.9	LOS F	35.7	913.2	1.00	3.18	8.91	11.7
Approach			570	3.0	570	3.0	1.195	131.9	LOS F	35.7	913.2	1.00	3.18	8.91	11.6
All Vehicles			4844	3.0	4844	3.0	1.847	65.7	LOS F	71.2	1823.0	0.82	1.36	3.40	17.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: CNP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	204	1.0	204	1.0	1.067	69.6	LOS F	41.4	1042.7	1.00	2.47	5.08	17.0
8	T1	All MCs	516	1.0	516	1.0	1.067	69.6	LOS F	41.4	1042.7	1.00	2.47	5.08	17.1
18	R2	All MCs	183	1.0	183	1.0	1.067	69.6	LOS F	41.4	1042.7	1.00	2.47	5.08	17.1
Approach			903	1.0	903	1.0	1.067	69.6	LOS F	41.4	1042.7	1.00	2.47	5.08	17.1
East: Sheldon Road															
1	L2	All MCs	215	1.0	215	1.0	1.152	104.1	LOS F	47.2	1188.5	1.00	2.97	7.00	13.5
6	T1	All MCs	559	1.0	559	1.0	1.152	104.1	LOS F	47.2	1188.5	1.00	2.97	7.00	13.6
16	R2	All MCs	32	1.0	32	1.0	1.152	104.1	LOS F	47.2	1188.5	1.00	2.97	7.00	13.6
Approach			806	1.0	806	1.0	1.152	104.1	LOS F	47.2	1188.5	1.00	2.97	7.00	13.6
North: Waterman Road															
7	L2	All MCs	43	1.0	43	1.0	1.065	79.0	LOS F	27.5	693.0	1.00	2.25	5.05	16.0
4	T1	All MCs	602	1.0	602	1.0	1.065	79.0	LOS F	27.5	693.0	1.00	2.25	5.05	16.1
14	R2	All MCs	226	1.0	226	1.0	0.373	11.3	LOS B	1.7	42.4	0.70	0.71	0.84	30.6
Approach			871	1.0	871	1.0	1.065	61.4	LOS F	27.5	693.0	0.92	1.85	3.95	18.3
West: Sheldon Road															
5	L2	All MCs	129	1.0	129	1.0	0.761	17.4	LOS C	8.9	224.2	0.93	1.06	1.72	27.9
2	T1	All MCs	441	1.0	441	1.0	0.761	17.4	LOS C	8.9	224.2	0.93	1.06	1.72	28.4
12	R2	All MCs	204	1.0	204	1.0	0.761	17.4	LOS C	8.9	224.2	0.93	1.06	1.72	28.2
Approach			774	1.0	774	1.0	0.761	17.4	LOS C	8.9	224.2	0.93	1.06	1.72	28.2
All Vehicles			3355	1.0	3355	1.0	1.152	63.7	LOS F	47.2	1188.5	0.96	2.10	4.47	17.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

HCM 6th Signalized Intersection Summary

2: Waterman Rd & Calvin Rd

06/10/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	1120	240	280	950	120	120	480	150	140	490	350
Future Volume (veh/h)	405	1120	240	280	950	120	120	480	150	140	490	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	471	1302	158	326	1105	140	140	558	174	163	570	407
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	524	1367	610	357	1198	533	170	951	424	222	1004	441
Arrive On Green	0.15	0.38	0.38	0.10	0.33	0.33	0.05	0.27	0.27	0.06	0.28	0.28
Sat Flow, veh/h	3483	3582	1598	3483	3582	1595	3483	3582	1596	3483	3582	1574
Grp Volume(v), veh/h	471	1302	158	326	1105	140	140	558	174	163	570	407
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1595	1742	1791	1596	1742	1791	1574
Q Serve(g_s), s	14.7	39.0	7.5	10.2	32.8	7.1	4.4	15.0	9.9	5.1	15.0	27.7
Cycle Q Clear(g_c), s	14.7	39.0	7.5	10.2	32.8	7.1	4.4	15.0	9.9	5.1	15.0	27.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	524	1367	610	357	1198	533	170	951	424	222	1004	441
V/C Ratio(X)	0.90	0.95	0.26	0.91	0.92	0.26	0.82	0.59	0.41	0.73	0.57	0.92
Avail Cap(c_a), veh/h	524	1367	610	357	1198	533	170	1094	487	246	1169	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	33.2	23.4	49.0	35.3	26.8	52.0	35.2	33.4	50.7	34.0	38.5
Incr Delay (d2), s/veh	17.9	15.4	1.0	26.7	13.0	1.2	24.9	0.3	0.2	7.9	0.2	19.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	18.7	2.9	5.6	15.6	2.8	2.5	6.3	3.7	2.4	6.3	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.9	48.6	24.5	75.7	48.4	28.0	76.9	35.5	33.6	58.7	34.2	57.8
LnGrp LOS	E	D	C	E	D	C	E	D	C	E	C	E
Approach Vol, veh/h	1931				1571				872			
Approach Delay, s/veh	50.3				52.2				41.8			
Approach LOS	D				D				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	42.3	10.9	36.1	15.8	47.5	12.5	34.5				
Change Period (Y+Rc), s	4.4	* 5.4	5.5	5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	16.6	* 37	5.4	36.0	11.3	41.7	7.8	* 34				
Max Q Clear Time (g_c+I1), s	16.7	34.8	6.4	29.7	12.2	41.0	7.1	17.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	1.0	0.0	0.4	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay, s/veh	48.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 3: Waterman Rd & Bond Rd

Cumulative No Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	600	440	130	550	120	305	640	140	160	610	250
Future Volume (veh/h)	180	600	440	130	550	120	305	640	140	160	610	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	182	606	265	131	556	42	308	646	31	162	616	52
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	362	1321	580	356	1315	585	369	733	326	361	725	323
Arrive On Green	0.10	0.37	0.37	0.10	0.37	0.37	0.11	0.20	0.20	0.10	0.20	0.20
Sat Flow, veh/h	3483	3582	1574	3483	3582	1595	3483	3582	1593	3483	3582	1598
Grp Volume(v), veh/h	182	606	265	131	556	42	308	646	31	162	616	52
Grp Sat Flow(s),veh/h/ln	1742	1791	1574	1742	1791	1595	1742	1791	1593	1742	1791	1598
Q Serve(g_s), s	5.2	13.5	13.4	3.7	12.2	1.8	9.1	18.4	1.7	4.6	17.4	2.8
Cycle Q Clear(g_c), s	5.2	13.5	13.4	3.7	12.2	1.8	9.1	18.4	1.7	4.6	17.4	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	1321	580	356	1315	585	369	733	326	361	725	323
V/C Ratio(X)	0.50	0.46	0.46	0.37	0.42	0.07	0.84	0.88	0.10	0.45	0.85	0.16
Avail Cap(c_a), veh/h	364	1321	580	364	1315	585	437	1403	624	364	1328	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	25.2	25.2	44.0	24.9	21.6	46.1	40.6	33.9	44.3	40.4	34.6
Incr Delay (d2), s/veh	0.4	1.1	2.6	0.2	1.0	0.2	10.0	1.4	0.0	0.3	1.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.6	5.2	1.6	5.1	0.7	4.3	7.9	0.6	1.9	7.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.9	26.4	27.8	44.3	25.9	21.9	56.1	42.0	34.0	44.6	41.5	34.7
LnGrp LOS	D	C	C	D	C	C	E	D	C	D	D	C
Approach Vol, veh/h	1053			729			985			830		
Approach Delay, s/veh	29.9			29.0			46.1			41.7		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	44.4	16.9	27.1	16.6	44.6	16.7	27.3				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	11.0	41.2				
Max Q Clear Time (g_c+I1), s	7.2	14.2	11.1	19.4	5.7	15.5	6.6	20.4				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.6	0.0	0.6	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	36.9											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Cumulative No Project PM
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	510	120	160	580	90	132	1060	130	160	1120	570
Future Volume (veh/h)	555	510	120	160	580	90	132	1060	130	160	1120	570
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	597	548	32	172	624	14	142	1140	140	172	1204	462
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	608	1056	471	268	707	314	240	1946	604	241	1948	605
Arrive On Green	0.18	0.30	0.30	0.08	0.20	0.20	0.07	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	5106	1584	3456	5106	1585
Grp Volume(v), veh/h	597	548	32	172	624	14	142	1140	140	172	1204	462
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1702	1584	1728	1702	1585
Q Serve(g_s), s	22.1	16.5	1.9	6.2	21.9	0.9	5.1	22.9	7.7	6.3	24.5	32.7
Cycle Q Clear(g_c), s	22.1	16.5	1.9	6.2	21.9	0.9	5.1	22.9	7.7	6.3	24.5	32.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	1056	471	268	707	314	240	1946	604	241	1948	605
V/C Ratio(X)	0.98	0.52	0.07	0.64	0.88	0.04	0.59	0.59	0.23	0.71	0.62	0.76
Avail Cap(c_a), veh/h	608	1438	641	339	1161	516	242	1946	604	242	1948	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	37.5	32.4	57.5	50.0	41.6	58.0	31.7	27.0	58.5	32.2	34.7
Incr Delay (d2), s/veh	31.9	0.1	0.0	1.1	2.7	0.0	2.6	1.3	0.9	8.1	1.5	8.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	7.1	0.7	2.7	9.8	0.4	2.3	9.3	3.0	3.0	10.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	84.7	37.7	32.4	58.7	52.8	41.6	60.6	33.0	27.9	66.6	33.7	43.6
LnGrp LOS	F	D	C	E	D	D	E	C	C	E	C	D
Approach Vol, veh/h	1177			810			1422			1838		
Approach Delay, s/veh	61.4			53.8			35.2			39.2		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	54.8	28.0	31.0	14.8	54.8	15.4	43.6				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	49.0	22.6	42.0	9.0	49.0	12.6	52.0				
Max Q Clear Time (g_c+I1), s	7.1	34.7	24.1	23.9	8.3	24.9	8.2	18.5				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.7	0.0	1.3	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	45.4											
HCM 6th LOS	D											

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: CNP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	69	3.0	69	3.0	0.650	12.4	LOS B	7.2	185.1	0.76	0.72	1.19	30.0
8	T1	All MCs	1172	3.0	1172	3.0	0.650	12.4	LOS B	7.2	185.1	0.76	0.72	1.19	30.6
18	R2	All MCs	161	3.0	161	3.0	0.650	12.4	LOS B	7.2	185.1	0.76	0.72	1.19	30.4
Approach			1402	3.0	1402	3.0	0.650	12.4	LOS B	7.2	185.1	0.76	0.72	1.19	30.6
East: Sheldon Road															
1	L2	All MCs	69	3.0	69	3.0	2.212	596.2	LOS F	78.4	2006.2	1.00	3.81	12.38	3.5
6	T1	All MCs	322	3.0	322	3.0	2.212	595.6	LOS F	78.4	2006.2	1.00	3.81	12.38	3.5
16	R2	All MCs	46	3.0	46	3.0	2.212	596.2	LOS F	78.4	2006.2	1.00	3.81	12.38	3.5
Approach			437	3.0	437	3.0	2.212	595.8	LOS F	78.4	2006.2	1.00	3.81	12.38	3.5
North: Bradshaw Road															
7	L2	All MCs	52	3.0	52	3.0	0.628	9.1	LOS A	5.3	135.5	0.61	0.35	0.63	31.4
4	T1	All MCs	1391	3.0	1391	3.0	0.628	9.1	LOS A	5.3	135.5	0.61	0.35	0.63	32.1
14	R2	All MCs	517	3.0	517	3.0	0.628	9.1	LOS A	5.3	135.5	0.61	0.35	0.63	31.7
Approach			1960	3.0	1960	3.0	0.628	9.1	LOS A	5.3	135.5	0.61	0.35	0.63	32.0
West: Sheldon Road															
5	L2	All MCs	218	3.0	218	3.0	1.472	245.0	LOS F	73.0	1869.0	1.00	4.81	14.86	7.4
2	T1	All MCs	310	3.0	310	3.0	1.472	245.0	LOS F	73.0	1869.0	1.00	4.81	14.86	7.4
12	R2	All MCs	149	3.0	149	3.0	1.472	245.0	LOS F	73.0	1869.0	1.00	4.81	14.86	7.4
Approach			678	3.0	678	3.0	1.472	245.0	LOS F	73.0	1869.0	1.00	4.81	14.86	7.4
All Vehicles			4477	3.0	4477	3.0	2.212	103.1	LOS F	78.4	2006.2	0.75	1.48	4.11	13.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\5_Cumulative No Project
\Summer_Villas_CNP.sip9

MOVEMENT SUMMARY

 Site: 1 [Waterman & Sheldon AM Peak Hour (Site Folder: CPP)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	221	2.0	221	2.0	0.914	29.2	LOS D	23.4	594.9	1.00	1.56	2.73	24.3
8	T1	All MCs	600	2.0	600	2.0	0.914	29.2	LOS D	23.4	594.9	1.00	1.56	2.73	24.7
18	R2	All MCs	177	2.0	177	2.0	0.914	29.2	LOS D	23.4	594.9	1.00	1.56	2.73	24.5
Approach			998	2.0	998	2.0	0.914	29.2	LOS D	23.4	594.9	1.00	1.56	2.73	24.5
East: Sheldon Road															
1	L2	All MCs	211	2.0	211	2.0	1.815	390.4	LOS F	141.7	3600.1	1.00	5.80	16.80	5.0
6	T1	All MCs	662	2.0	662	2.0	1.815	390.4	LOS F	141.7	3600.1	1.00	5.80	16.80	5.0
16	R2	All MCs	94	2.0	94	2.0	1.815	390.4	LOS F	141.7	3600.1	1.00	5.80	16.80	5.0
Approach			966	2.0	966	2.0	1.815	390.4	LOS F	141.7	3600.1	1.00	5.80	16.80	5.0
North: Waterman Road															
7	L2	All MCs	47	2.0	47	2.0	0.961	48.2	LOS E	19.2	487.2	1.00	1.74	3.35	20.3
4	T1	All MCs	613	2.0	613	2.0	0.961	48.2	LOS E	19.2	487.2	1.00	1.74	3.35	20.6
14	R2	All MCs	211	2.0	211	2.0	0.306	9.0	LOS A	1.3	32.0	0.65	0.58	0.66	31.5
Approach			871	2.0	871	2.0	0.961	38.7	LOS E	19.2	487.2	0.91	1.46	2.70	22.4
West: Sheldon Road															
5	L2	All MCs	147	2.0	147	2.0	0.980	50.2	LOS F	21.4	543.1	1.00	1.84	3.56	19.8
2	T1	All MCs	357	2.0	357	2.0	0.980	50.2	LOS F	21.4	543.1	1.00	1.84	3.56	20.1
12	R2	All MCs	223	2.0	223	2.0	0.980	50.2	LOS F	21.4	543.1	1.00	1.84	3.56	20.0
Approach			727	2.0	727	2.0	0.980	50.2	LOS F	21.4	543.1	1.00	1.84	3.56	20.0
All Vehicles			3562	2.0	3562	2.0	1.815	133.8	LOS F	141.7	3600.1	0.98	2.74	6.71	11.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

HCM 6th Signalized Intersection Summary 2: Waterman Rd & Calvin Rd

Cumulative Plus Project AM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	485	960	172	285	1430	230	160	629	272	90	495	430
Future Volume (veh/h)	485	960	172	285	1430	230	160	629	272	90	495	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	527	1043	113	310	1554	250	174	684	296	98	538	467
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	1619	720	356	1474	656	181	920	403	142	880	391
Arrive On Green	0.14	0.46	0.46	0.10	0.41	0.41	0.05	0.26	0.26	0.04	0.25	0.25
Sat Flow, veh/h	3456	3554	1581	3456	3554	1583	3456	3554	1556	3456	3554	1581
Grp Volume(v), veh/h	527	1043	113	310	1554	250	174	684	296	98	538	467
Grp Sat Flow(s),veh/h/ln	1728	1777	1581	1728	1777	1583	1728	1777	1556	1728	1777	1581
Q Serve(g_s), s	21.0	32.9	6.1	12.9	60.3	16.0	7.3	25.7	25.3	4.1	19.5	36.0
Cycle Q Clear(g_c), s	21.0	32.9	6.1	12.9	60.3	16.0	7.3	25.7	25.3	4.1	19.5	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	499	1619	720	356	1474	656	181	920	403	142	880	391
V/C Ratio(X)	1.06	0.64	0.16	0.87	1.05	0.38	0.96	0.74	0.73	0.69	0.61	1.19
Avail Cap(c_a), veh/h	499	1619	720	475	1474	656	181	920	403	152	880	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	30.5	23.2	64.3	42.5	29.6	68.8	49.4	49.3	68.8	48.5	54.7
Incr Delay (d2), s/veh	55.8	2.0	0.5	10.5	39.3	1.7	55.7	2.9	6.0	9.3	0.9	109.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	14.0	2.3	6.1	33.3	6.3	4.6	11.5	10.3	2.0	8.6	25.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	118.0	32.5	23.7	74.7	81.8	31.3	124.5	52.4	55.3	78.1	49.4	164.1
LnGrp LOS	F	C	C	E	F	C	F	D	E	E	D	F
Approach Vol, veh/h	1683			2114			1154			1103		
Approach Delay, s/veh	58.7			74.8			64.0			100.5		
Approach LOS	E			E			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	65.7	13.1	41.2	19.5	71.6	11.5	42.8				
Change Period (Y+Rc), s	4.4	* 5.4	5.5	5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	21.0	* 60	7.6	36.0	20.0	60.8	6.4	* 37				
Max Q Clear Time (g_c+I1), s	23.0	62.3	9.3	38.0	14.9	34.9	6.1	27.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	2.5	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	72.9											
HCM 6th LOS	E											
Notes												

HCM 6th Signalized Intersection Summary 3: Waterman Rd & Bond Rd

Cumulative Plus Project AM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	480	500	120	610	210	530	535	100	225	720	251
Future Volume (veh/h)	245	480	500	120	610	210	530	535	100	225	720	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	292	571	335	143	726	40	631	637	25	268	857	128
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	1057	470	279	995	444	674	1278	563	316	909	406
Arrive On Green	0.10	0.30	0.30	0.08	0.28	0.28	0.19	0.36	0.36	0.09	0.26	0.26
Sat Flow, veh/h	3456	3554	1580	3456	3554	1585	3456	3554	1565	3456	3554	1585
Grp Volume(v), veh/h	292	571	335	143	726	40	631	637	25	268	857	128
Grp Sat Flow(s),veh/h/ln	1728	1777	1580	1728	1777	1585	1728	1777	1565	1728	1777	1585
Q Serve(g_s), s	11.3	18.2	25.6	5.4	25.1	2.5	24.4	19.0	1.4	10.4	32.1	8.9
Cycle Q Clear(g_c), s	11.3	18.2	25.6	5.4	25.1	2.5	24.4	19.0	1.4	10.4	32.1	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	1057	470	279	995	444	674	1278	563	316	909	406
V/C Ratio(X)	0.86	0.54	0.71	0.51	0.73	0.09	0.94	0.50	0.04	0.85	0.94	0.32
Avail Cap(c_a), veh/h	392	1057	470	357	995	444	744	1278	563	553	1021	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.3	39.9	42.5	59.8	44.2	36.1	53.8	33.9	28.3	60.7	49.5	40.9
Incr Delay (d2), s/veh	14.2	2.0	8.9	0.5	4.7	0.4	17.6	0.1	0.0	2.5	14.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	8.1	10.9	2.3	11.4	1.0	12.0	8.0	0.5	4.6	15.7	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	74.5	41.9	51.4	60.4	48.9	36.5	71.4	34.0	28.3	63.2	64.1	41.0
LnGrp LOS	E	D	D	E	D	D	E	C	C	E	E	D
Approach Vol, veh/h	1198			909			1293			1253		
Approach Delay, s/veh	52.5			50.1			52.1			61.5		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.1	43.8	32.3	40.5	16.7	46.2	18.2	54.6				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	15.4	38.0	29.2	39.0	14.0	39.4	21.7	46.5				
Max Q Clear Time (g_c+I1), s	13.3	27.1	26.4	34.1	7.4	27.6	12.4	21.0				
Green Ext Time (p_c), s	0.0	0.7	0.1	0.6	0.0	0.5	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	54.4											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 4: Elk Grove Florin Rd & Sheldon Rd

Cumulative Plus Project AM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	542	349	140	216	691	172	100	1130	81	180	1040	600
Future Volume (veh/h)	542	349	140	216	691	172	100	1130	81	180	1040	600
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	589	379	37	235	751	65	109	1228	88	196	1130	543
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	606	1140	508	281	807	360	218	1877	583	236	1903	591
Arrive On Green	0.18	0.32	0.32	0.08	0.23	0.23	0.06	0.37	0.37	0.07	0.38	0.38
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	3428	5066	1572	3428	5066	1572
Grp Volume(v), veh/h	589	379	37	235	751	65	109	1228	88	196	1130	543
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1714	1689	1572	1714	1689	1572
Q Serve(g_s), s	23.8	11.4	2.3	9.4	29.1	4.6	4.3	28.1	5.2	7.9	25.0	45.9
Cycle Q Clear(g_c), s	23.8	11.4	2.3	9.4	29.1	4.6	4.3	28.1	5.2	7.9	25.0	45.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	606	1140	508	281	807	360	218	1877	583	236	1903	591
V/C Ratio(X)	0.97	0.33	0.07	0.83	0.93	0.18	0.50	0.65	0.15	0.83	0.59	0.92
Avail Cap(c_a), veh/h	606	1140	508	606	1063	474	236	1877	583	236	1903	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.0	35.7	32.6	63.0	52.6	43.2	63.1	36.4	29.2	64.0	34.9	41.4
Incr Delay (d2), s/veh	29.5	0.1	0.0	2.5	10.4	0.1	0.7	1.8	0.5	20.1	1.4	21.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	4.9	0.9	4.2	13.8	1.8	1.9	11.5	2.0	4.0	10.2	20.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	86.5	35.8	32.7	65.5	63.0	43.3	63.7	38.2	29.8	84.2	36.3	63.1
LnGrp LOS	F	D	C	E	E	D	E	D	C	F	D	E
Approach Vol, veh/h	1005			1051			1425			1869		
Approach Delay, s/veh	65.4			62.3			39.6			49.1		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	57.7	30.0	37.3	15.0	57.0	16.8	50.4				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	9.6	51.6	24.6	42.0	9.6	51.6	24.6	42.0				
Max Q Clear Time (g_c+I1), s	6.3	47.9	25.8	31.1	9.9	30.1	11.4	13.4				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.8	0.0	1.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	52.2											
HCM 6th LOS	D											

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour (Site Folder: CPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	226	3.0	226	3.0	0.693	11.4	LOS B	9.4	239.4	0.78	0.75	1.26	30.0
8	T1	All MCs	1548	3.0	1548	3.0	0.693	11.4	LOS B	9.4	239.4	0.78	0.75	1.26	30.9
18	R2	All MCs	183	3.0	183	3.0	0.693	11.4	LOS B	9.4	239.4	0.78	0.75	1.26	30.8
Approach			1957	3.0	1957	3.0	0.693	11.4	LOS B	9.4	239.4	0.78	0.75	1.26	30.8
East: Sheldon Road															
1	L2	All MCs	215	3.0	215	3.0	1.856	429.5	LOS F	71.7	1836.6	1.00	4.27	14.30	4.7
6	T1	All MCs	227	3.0	227	3.0	1.856	429.5	LOS F	71.7	1836.6	1.00	4.27	14.30	4.7
16	R2	All MCs	32	3.0	32	3.0	1.856	435.0	LOS F	71.7	1836.6	1.00	4.27	14.30	4.7
Approach			474	3.0	474	3.0	1.856	429.8	LOS F	71.7	1836.6	1.00	4.27	14.30	4.7
North: Bradshaw Road															
7	L2	All MCs	48	3.0	48	3.0	0.660	10.6	LOS B	8.0	205.5	0.75	0.71	1.19	30.8
4	T1	All MCs	1333	3.0	1333	3.0	0.660	10.6	LOS B	8.0	205.5	0.75	0.71	1.19	31.4
14	R2	All MCs	466	3.0	466	3.0	0.660	10.6	LOS B	8.0	205.5	0.75	0.71	1.19	31.1
Approach			1847	3.0	1847	3.0	0.660	10.6	LOS B	8.0	205.5	0.75	0.71	1.19	31.3
West: Sheldon Road															
5	L2	All MCs	310	3.0	310	3.0	1.257	155.7	LOS F	44.4	1136.2	1.00	3.61	10.49	10.4
2	T1	All MCs	191	3.0	191	3.0	1.257	155.7	LOS F	44.4	1136.2	1.00	3.61	10.49	10.4
12	R2	All MCs	99	3.0	99	3.0	1.257	155.7	LOS F	44.4	1136.2	1.00	3.61	10.49	10.4
Approach			600	3.0	600	3.0	1.257	155.7	LOS F	44.4	1136.2	1.00	3.61	10.49	10.4
All Vehicles			4878	3.0	4878	3.0	1.856	69.5	LOS F	71.7	1836.6	0.82	1.43	3.64	17.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

MOVEMENT SUMMARY

 Site: 1 [Waterman & Sheldon PM Peak Hour (Site Folder: CPP)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	210	1.0	210	1.0	1.183	112.6	LOS F	60.2	1518.2	1.00	3.29	7.63	12.9
8	T1	All MCs	519	1.0	519	1.0	1.183	112.6	LOS F	60.2	1518.2	1.00	3.29	7.63	13.0
18	R2	All MCs	198	1.0	198	1.0	1.183	112.6	LOS F	60.2	1518.2	1.00	3.29	7.63	12.9
Approach			927	1.0	927	1.0	1.183	112.6	LOS F	60.2	1518.2	1.00	3.29	7.63	12.9
East: Sheldon Road															
1	L2	All MCs	223	1.0	223	1.0	1.141	98.4	LOS F	48.3	1216.6	1.00	2.94	6.76	14.0
6	T1	All MCs	581	1.0	581	1.0	1.141	98.4	LOS F	48.3	1216.6	1.00	2.94	6.76	14.1
16	R2	All MCs	43	1.0	43	1.0	1.141	98.4	LOS F	48.3	1216.6	1.00	2.94	6.76	14.1
Approach			846	1.0	846	1.0	1.141	98.4	LOS F	48.3	1216.6	1.00	2.94	6.76	14.1
North: Waterman Road															
7	L2	All MCs	71	1.0	71	1.0	1.141	104.4	LOS F	38.3	965.1	1.00	2.74	6.65	13.6
4	T1	All MCs	612	1.0	612	1.0	1.141	104.4	LOS F	38.3	965.1	1.00	2.74	6.65	13.7
14	R2	All MCs	226	1.0	226	1.0	0.377	11.5	LOS B	1.7	43.1	0.71	0.72	0.85	30.5
Approach			909	1.0	909	1.0	1.141	81.3	LOS F	38.3	965.1	0.93	2.24	5.21	15.8
West: Sheldon Road															
5	L2	All MCs	129	1.0	129	1.0	0.830	21.9	LOS C	11.9	300.3	0.99	1.23	2.10	26.4
2	T1	All MCs	498	1.0	498	1.0	0.830	21.9	LOS C	11.9	300.3	0.99	1.23	2.10	26.9
12	R2	All MCs	214	1.0	214	1.0	0.830	21.9	LOS C	11.9	300.3	0.99	1.23	2.10	26.7
Approach			841	1.0	841	1.0	0.830	21.9	LOS C	11.9	300.3	0.99	1.23	2.10	26.8
All Vehicles			3523	1.0	3523	1.0	1.183	79.5	LOS F	60.2	1518.2	0.98	2.44	5.48	15.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

HCM 6th Signalized Intersection Summary 2: Waterman Rd & Calvin Rd

Cumulative Plus Project PM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	1120	249	282	950	120	123	490	151	140	516	350
Future Volume (veh/h)	405	1120	249	282	950	120	123	490	151	140	516	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	471	1302	198	328	1105	140	143	570	176	163	600	407
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	524	1363	608	357	1194	532	174	956	426	222	1006	442
Arrive On Green	0.15	0.38	0.38	0.10	0.33	0.33	0.05	0.27	0.27	0.06	0.28	0.28
Sat Flow, veh/h	3483	3582	1598	3483	3582	1595	3483	3582	1596	3483	3582	1574
Grp Volume(v), veh/h	471	1302	198	328	1105	140	143	570	176	163	600	407
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1595	1742	1791	1596	1742	1791	1574
Q Serve(g_s), s	14.7	39.1	9.7	10.3	32.8	7.1	4.5	15.3	10.0	5.1	16.0	27.7
Cycle Q Clear(g_c), s	14.7	39.1	9.7	10.3	32.8	7.1	4.5	15.3	10.0	5.1	16.0	27.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	524	1363	608	357	1194	532	174	956	426	222	1006	442
V/C Ratio(X)	0.90	0.96	0.33	0.92	0.93	0.26	0.82	0.60	0.41	0.73	0.60	0.92
Avail Cap(c_a), veh/h	524	1363	608	357	1194	532	174	1097	489	246	1168	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	33.3	24.2	49.1	35.5	26.9	52.0	35.3	33.3	50.8	34.3	38.5
Incr Delay (d2), s/veh	17.9	15.8	1.4	27.9	13.4	1.2	25.0	0.3	0.2	8.0	0.3	19.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	18.8	3.7	5.7	15.7	2.8	2.5	6.5	3.8	2.4	6.7	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.0	49.1	25.6	77.0	48.9	28.1	76.9	35.6	33.6	58.7	34.6	57.7
LnGrp LOS	E	D	C	E	D	C	E	D	C	E	C	E
Approach Vol, veh/h	1971			1573			889			1170		
Approach Delay, s/veh	50.3			52.9			41.9			46.0		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	42.2	11.0	36.2	15.8	47.4	12.5	34.7				
Change Period (Y+Rc), s	4.4	* 5.4	5.5	5.2	4.5	5.4	5.5	* 5.2				
Max Green Setting (Gmax), s	16.6	* 37	5.5	36.0	11.3	41.6	7.8	* 34				
Max Q Clear Time (g_c+I1), s	16.7	34.8	6.5	29.7	12.3	41.1	7.1	17.3				
Green Ext Time (p_c), s	0.0	0.8	0.0	1.1	0.0	0.3	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	48.8											
HCM 6th LOS	D											
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary 3: Waterman Rd & Bond Rd

Cumulative Plus Project PM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	600	440	130	550	120	305	666	140	163	617	261
Future Volume (veh/h)	208	600	440	130	550	120	305	666	140	163	617	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	210	606	266	131	556	42	308	673	31	165	623	56
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	360	1309	575	353	1302	580	368	759	337	358	748	334
Arrive On Green	0.10	0.37	0.37	0.10	0.36	0.36	0.11	0.21	0.21	0.10	0.21	0.21
Sat Flow, veh/h	3483	3582	1574	3483	3582	1595	3483	3582	1593	3483	3582	1598
Grp Volume(v), veh/h	210	606	266	131	556	42	308	673	31	165	623	56
Grp Sat Flow(s),veh/h/ln	1742	1791	1574	1742	1791	1595	1742	1791	1593	1742	1791	1598
Q Serve(g_s), s	6.1	13.7	13.7	3.7	12.4	1.8	9.2	19.4	1.7	4.7	17.7	3.1
Cycle Q Clear(g_c), s	6.1	13.7	13.7	3.7	12.4	1.8	9.2	19.4	1.7	4.7	17.7	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	1309	575	353	1302	580	368	759	337	358	748	334
V/C Ratio(X)	0.58	0.46	0.46	0.37	0.43	0.07	0.84	0.89	0.09	0.46	0.83	0.17
Avail Cap(c_a), veh/h	361	1309	575	361	1302	580	433	1390	618	361	1316	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	25.7	25.7	44.5	25.5	22.1	46.6	40.6	33.6	44.9	40.2	34.4
Incr Delay (d2), s/veh	1.6	1.2	2.7	0.2	1.0	0.2	10.3	1.4	0.0	0.3	0.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.7	5.3	1.6	5.2	0.7	4.4	8.3	0.6	2.0	7.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.0	26.9	28.4	44.8	26.5	22.3	56.9	42.1	33.7	45.2	41.2	34.5
LnGrp LOS	D	C	C	D	C	C	E	D	C	D	D	C
Approach Vol, veh/h	1082				729				1012			
Approach Delay, s/veh	31.2				29.5				46.3			
Approach LOS	C				C				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	44.4	17.0	28.0	16.6	44.6	16.7	28.3				
Change Period (Y+Rc), s	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
Max Green Setting (Gmax), s	11.0	38.6	13.2	39.0	11.0	38.6	11.0	41.2				
Max Q Clear Time (g_c+I1), s	8.1	14.4	11.2	19.7	5.7	15.7	6.7	21.4				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.6	0.0	0.6	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	37.4											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary
4: Elk Grove Florin Rd & Sheldon Rd

Cumulative Plus Project PM
04/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	555	564	120	162	601	91	132	1060	135	162	1120	570
Future Volume (veh/h)	555	564	120	162	601	91	132	1060	135	162	1120	570
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	597	606	32	174	646	15	142	1140	145	174	1204	509
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	1073	479	266	727	323	239	1932	599	240	1934	600
Arrive On Green	0.17	0.30	0.30	0.08	0.20	0.20	0.07	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	5106	1584	3456	5106	1585
Grp Volume(v), veh/h	597	606	32	174	646	15	142	1140	145	174	1204	509
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1702	1584	1728	1702	1585
Q Serve(g_s), s	22.3	18.6	1.9	6.3	22.9	1.0	5.2	23.1	8.1	6.4	24.8	38.0
Cycle Q Clear(g_c), s	22.3	18.6	1.9	6.3	22.9	1.0	5.2	23.1	8.1	6.4	24.8	38.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	603	1073	479	266	727	323	239	1932	599	240	1934	600
V/C Ratio(X)	0.99	0.56	0.07	0.65	0.89	0.05	0.59	0.59	0.24	0.73	0.62	0.85
Avail Cap(c_a), veh/h	603	1425	635	339	1153	512	240	1932	599	240	1934	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	38.0	32.2	58.1	50.1	41.4	58.5	32.2	27.5	59.0	32.7	36.8
Incr Delay (d2), s/veh	33.9	0.2	0.0	1.3	3.5	0.0	2.7	1.3	1.0	9.1	1.5	13.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	8.0	0.7	2.8	10.3	0.4	2.3	9.4	3.2	3.0	10.1	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	87.2	38.2	32.2	59.4	53.6	41.4	61.2	33.5	28.5	68.2	34.2	50.7
LnGrp LOS	F	D	C	E	D	D	E	C	C	E	C	D
Approach Vol, veh/h	1235			835			1427			1887		
Approach Delay, s/veh	61.7			54.6			35.8			41.8		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	54.8	28.0	31.9	14.8	54.8	15.4	44.5				
Change Period (Y+Rc), s	5.8	5.8	5.4	5.4	5.8	5.8	5.4	5.4				
Max Green Setting (Gmax), s	9.0	49.0	22.6	42.0	9.0	49.0	12.7	51.9				
Max Q Clear Time (g_c+I1), s	7.2	40.0	24.3	24.9	8.4	25.1	8.3	20.6				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.7	0.0	1.3	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	46.7											
HCM 6th LOS	D											

MOVEMENT SUMMARY

 Site: 5 [Bradshaw & Sheldon PM Peak Hour (Site Folder: CPP)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.652	12.4	LOS B	7.3	186.4	0.76	0.73	1.19	29.9
8	T1	All MCs	1172	3.0	1172	3.0	0.652	12.4	LOS B	7.3	186.4	0.76	0.73	1.19	30.6
18	R2	All MCs	161	3.0	161	3.0	0.652	12.4	LOS B	7.3	186.4	0.76	0.73	1.19	30.4
Approach			1405	3.0	1405	3.0	0.652	12.4	LOS B	7.3	186.4	0.76	0.73	1.19	30.5
East: Sheldon Road															
1	L2	All MCs	69	3.0	69	3.0	2.264	619.4	LOS F	81.1	2077.4	1.00	3.85	12.54	3.4
6	T1	All MCs	330	3.0	330	3.0	2.264	618.8	LOS F	81.1	2077.4	1.00	3.85	12.54	3.4
16	R2	All MCs	46	3.0	46	3.0	2.264	619.4	LOS F	81.1	2077.4	1.00	3.85	12.54	3.4
Approach			445	3.0	445	3.0	2.264	618.9	LOS F	81.1	2077.4	1.00	3.85	12.54	3.4
North: Bradshaw Road															
7	L2	All MCs	52	3.0	52	3.0	0.635	9.2	LOS A	5.7	145.9	0.61	0.37	0.66	31.4
4	T1	All MCs	1391	3.0	1391	3.0	0.635	9.2	LOS A	5.7	145.9	0.61	0.37	0.66	32.0
14	R2	All MCs	536	3.0	536	3.0	0.635	9.2	LOS A	5.7	145.9	0.61	0.37	0.66	31.7
Approach			1978	3.0	1978	3.0	0.635	9.2	LOS A	5.7	145.9	0.61	0.37	0.66	31.9
West: Sheldon Road															
5	L2	All MCs	225	3.0	225	3.0	1.496	255.2	LOS F	76.4	1956.4	1.00	4.93	15.29	7.2
2	T1	All MCs	314	3.0	314	3.0	1.496	255.2	LOS F	76.4	1956.4	1.00	4.93	15.29	7.2
12	R2	All MCs	151	3.0	151	3.0	1.496	255.2	LOS F	76.4	1956.4	1.00	4.93	15.29	7.2
Approach			690	3.0	690	3.0	1.496	255.2	LOS F	76.4	1956.4	1.00	4.93	15.29	7.2
All Vehicles			4517	3.0	4517	3.0	2.264	107.8	LOS F	81.1	2077.4	0.76	1.52	4.23	13.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix C

Delay Reports – with Improvements

Fehr&Peers

SITE LAYOUT

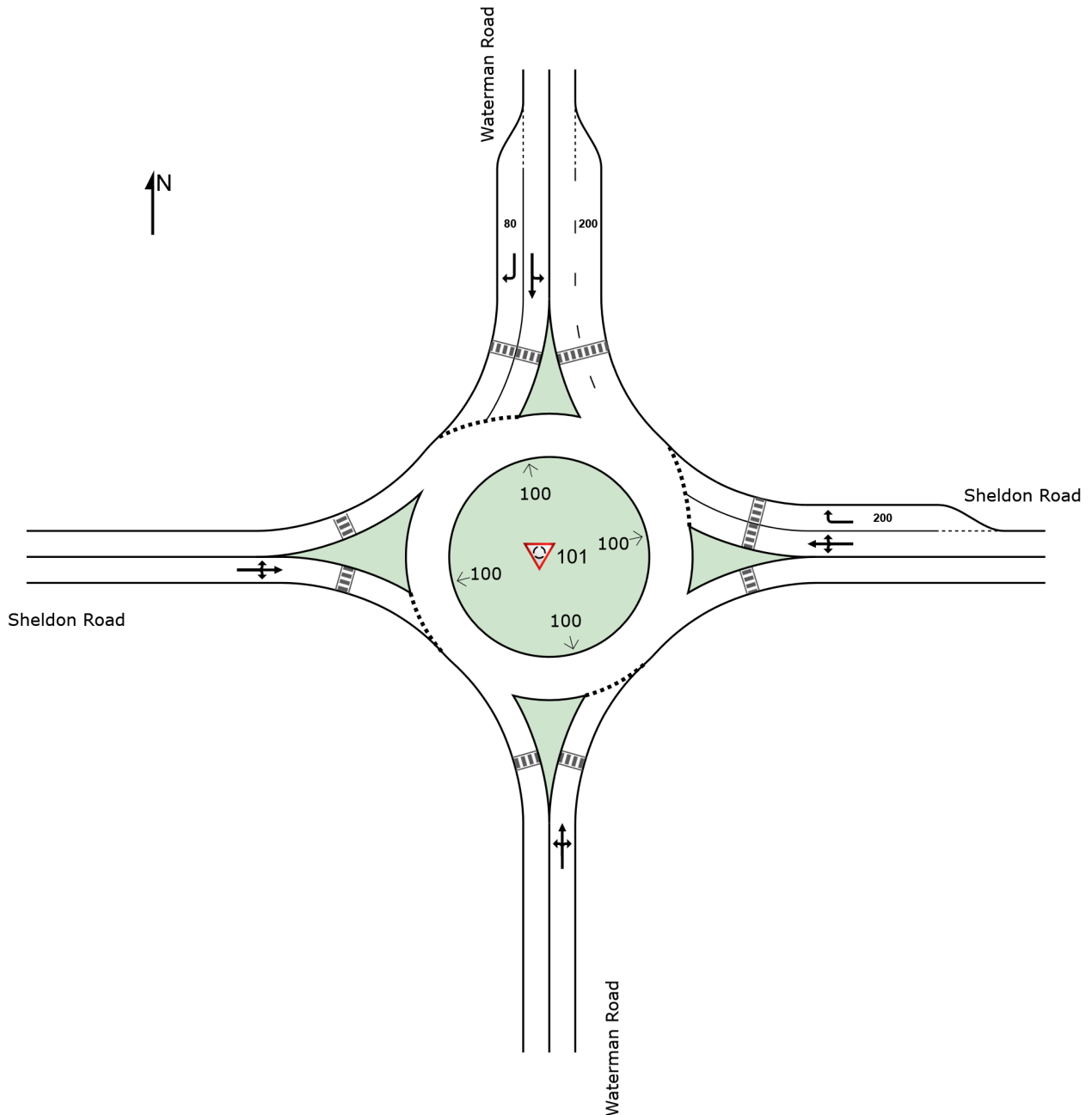
 **Site: 1 [Waterman & Sheldon - improvement
(Site Folder: Existing Plus Project)]**

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\2_Existing Plus Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour - improvement
(Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Queue	Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	220	2.0	220	2.0	0.667	12.3	LOS B	7.9	199.5	0.83	0.80	1.30	29.5
8	T1	All MCs	378	2.0	378	2.0	0.667	16.6	LOS C	7.9	199.5	0.83	0.80	1.30	30.0
18	R2	All MCs	169	2.0	169	2.0	0.667	12.3	LOS B	7.9	199.5	0.83	0.80	1.30	29.8
Approach			767	2.0	767	2.0	0.667	14.4	LOS B	7.9	199.5	0.83	0.80	1.30	29.8
East: Sheldon Road															
1	L2	All MCs	188	2.0	188	2.0	0.957	45.8	LOS E	19.0	483.1	1.00	1.73	3.34	20.6
6	T1	All MCs	509	2.0	509	2.0	0.957	45.8	LOS E	19.0	483.1	1.00	1.73	3.34	20.9
16	R2	All MCs	54	2.0	54	2.0	0.074	10.0	LOS A	0.3	6.6	0.57	0.50	0.57	33.1
Approach			752	2.0	752	2.0	0.957	43.3	LOS E	19.0	483.1	0.97	1.65	3.14	21.4
North: Waterman Road															
7	L2	All MCs	38	2.0	38	2.0	0.905	44.3	LOS E	10.5	267.9	0.96	1.42	2.56	21.1
4	T1	All MCs	464	2.0	464	2.0	0.905	44.3	LOS E	10.5	267.9	0.96	1.42	2.56	21.4
14	R2	All MCs	204	2.0	204	2.0	0.368	12.0	LOS B	1.6	40.1	0.71	0.73	0.85	30.3
Approach			706	2.0	706	2.0	0.905	34.9	LOS D	10.5	267.9	0.89	1.22	2.06	23.3
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	26.7
2	T1	All MCs	311	2.0	311	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.2
12	R2	All MCs	157	2.0	157	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.0
Approach			608	2.0	608	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.0
All Vehicles			2834	2.0	2834	2.0	0.957	28.5	LOS D	19.0	483.1	0.90	1.19	2.08	24.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\2_Existing Plus Project
\Summer_Villas.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour - improvement
(Site Folder: Existing Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: Waterman Road															
3	L2	All MCs	138	1.0	138	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	27.7
8	T1	All MCs	348	1.0	348	1.0	0.732	21.5	LOS C	9.0	228.1	0.91	1.00	1.63	28.2
18	R2	All MCs	166	1.0	166	1.0	0.732	17.6	LOS C	9.0	228.1	0.91	1.00	1.63	28.0
Approach			652	1.0	652	1.0	0.732	19.7	LOS C	9.0	228.1	0.91	1.00	1.63	28.1
East: Sheldon Road															
1	L2	All MCs	206	1.0	206	1.0	0.777	19.9	LOS C	10.0	253.2	0.91	1.08	1.81	26.9
6	T1	All MCs	490	1.0	490	1.0	0.777	19.9	LOS C	10.0	253.2	0.91	1.08	1.81	27.3
16	R2	All MCs	30	1.0	30	1.0	0.034	8.2	LOS A	0.1	3.1	0.50	0.40	0.50	33.8
Approach			727	1.0	727	1.0	0.777	19.5	LOS C	10.0	253.2	0.90	1.05	1.76	27.4
North: Waterman Road															
7	L2	All MCs	55	1.0	55	1.0	0.788	27.4	LOS D	7.3	184.6	0.90	1.14	1.82	25.0
4	T1	All MCs	434	1.0	434	1.0	0.788	27.4	LOS D	7.3	184.6	0.90	1.14	1.82	25.4
14	R2	All MCs	226	1.0	226	1.0	0.364	10.8	LOS B	1.6	41.2	0.69	0.69	0.81	30.8
Approach			715	1.0	715	1.0	0.788	22.2	LOS C	7.3	184.6	0.84	1.00	1.50	26.8
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.1
2	T1	All MCs	377	1.0	377	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.6
12	R2	All MCs	170	1.0	170	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.4
Approach			674	1.0	674	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.5
All Vehicles			2768	1.0	2768	1.0	0.788	18.2	LOS C	10.0	253.2	0.86	0.96	1.53	28.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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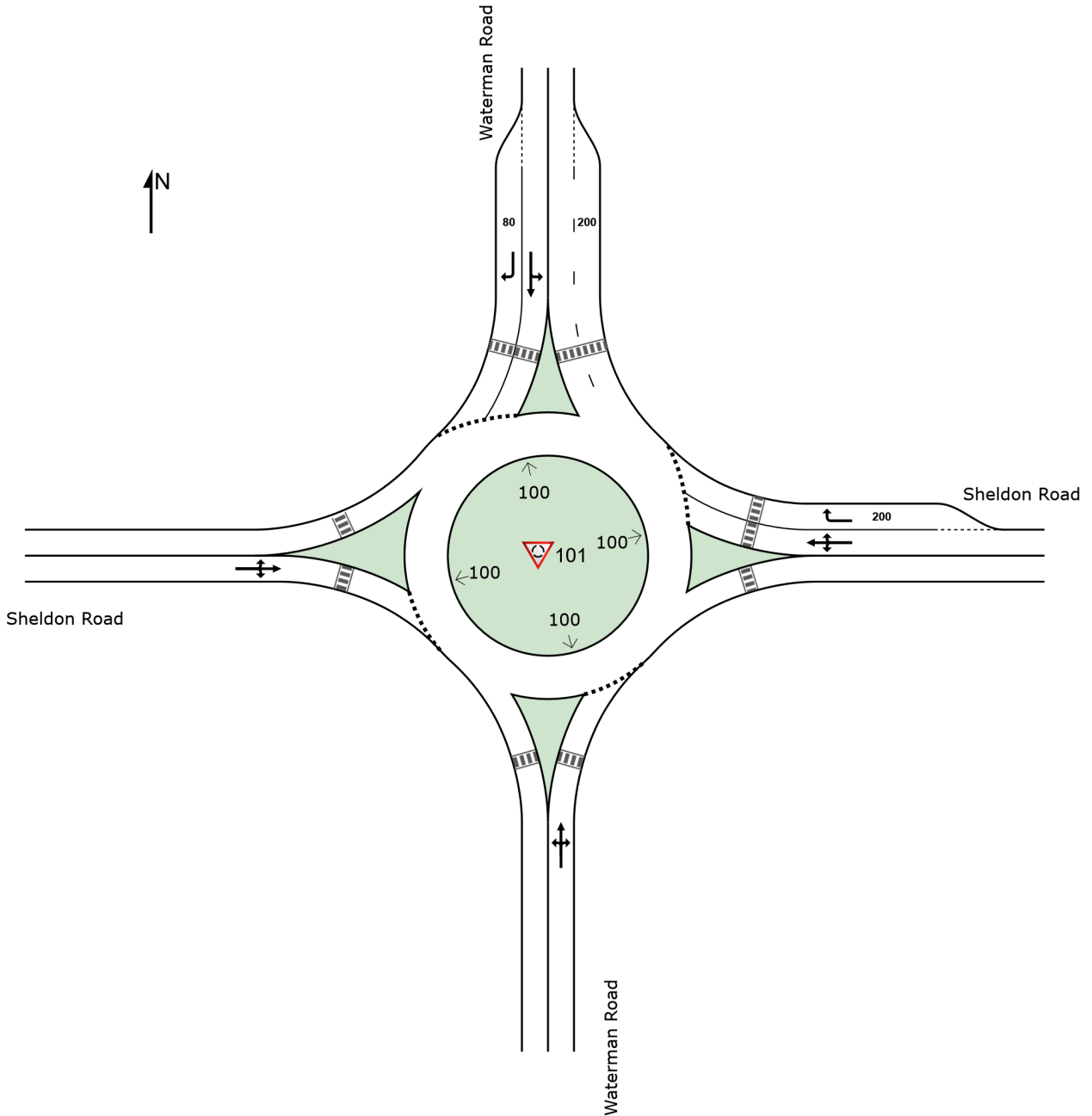
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SITE LAYOUT

 **Site: 1 [Waterman & Sheldon - Improvement
(Site Folder: EAPP)]**

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour - Improvement (Site Folder: EAPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	223	2.0	223	2.0	0.679	12.7	LOS B	8.3	211.2	0.84	0.82	1.34	29.3
8	T1	All MCs	386	2.0	386	2.0	0.679	17.0	LOS C	8.3	211.2	0.84	0.82	1.34	29.9
18	R2	All MCs	173	2.0	173	2.0	0.679	12.7	LOS B	8.3	211.2	0.84	0.82	1.34	29.7
Approach			782	2.0	782	2.0	0.679	14.8	LOS B	8.3	211.2	0.84	0.82	1.34	29.7
East: Sheldon Road															
1	L2	All MCs	188	2.0	188	2.0	0.969	48.6	LOS E	20.0	507.6	1.00	1.80	3.50	20.1
6	T1	All MCs	511	2.0	511	2.0	0.969	48.6	LOS E	20.0	507.6	1.00	1.80	3.50	20.4
16	R2	All MCs	54	2.0	54	2.0	0.074	10.1	LOS B	0.3	6.7	0.57	0.51	0.57	33.1
Approach			753	2.0	753	2.0	0.969	45.9	LOS E	20.0	507.6	0.97	1.70	3.29	20.9
North: Waterman Road															
7	L2	All MCs	38	2.0	38	2.0	0.909	45.0	LOS E	10.7	271.6	0.96	1.43	2.59	20.9
4	T1	All MCs	464	2.0	464	2.0	0.909	45.0	LOS E	10.7	271.6	0.96	1.43	2.59	21.2
14	R2	All MCs	205	2.0	205	2.0	0.371	12.1	LOS B	1.6	40.6	0.71	0.74	0.86	30.2
Approach			707	2.0	707	2.0	0.909	35.5	LOS E	10.7	271.6	0.89	1.23	2.09	23.2
West: Sheldon Road															
5	L2	All MCs	141	2.0	141	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	26.7
2	T1	All MCs	311	2.0	311	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.2
12	R2	All MCs	157	2.0	157	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.0
Approach			608	2.0	608	2.0	0.758	20.5	LOS C	8.4	214.6	0.93	1.08	1.76	27.0
All Vehicles			2851	2.0	2851	2.0	0.969	29.4	LOS D	20.0	507.6	0.90	1.21	2.13	24.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour - Improvement (Site Folder: EAPP)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: Waterman Road															
3	L2	All MCs	140	1.0	140	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	27.5
8	T1	All MCs	355	1.0	355	1.0	0.745	22.1	LOS C	9.5	239.8	0.92	1.02	1.68	28.0
18	R2	All MCs	168	1.0	168	1.0	0.745	18.2	LOS C	9.5	239.8	0.92	1.02	1.68	27.8
Approach			662	1.0	662	1.0	0.745	20.3	LOS C	9.5	239.8	0.92	1.02	1.68	27.9
East: Sheldon Road															
1	L2	All MCs	206	1.0	206	1.0	0.785	20.6	LOS C	10.3	259.1	0.92	1.10	1.86	26.7
6	T1	All MCs	492	1.0	492	1.0	0.785	20.6	LOS C	10.3	259.1	0.92	1.10	1.86	27.1
16	R2	All MCs	30	1.0	30	1.0	0.034	8.3	LOS A	0.1	3.1	0.51	0.40	0.51	33.8
Approach			729	1.0	729	1.0	0.785	20.1	LOS C	10.3	259.1	0.90	1.07	1.80	27.2
North: Waterman Road															
7	L2	All MCs	55	1.0	55	1.0	0.791	27.7	LOS D	7.4	185.9	0.90	1.14	1.83	24.9
4	T1	All MCs	434	1.0	434	1.0	0.791	27.7	LOS D	7.4	185.9	0.90	1.14	1.83	25.3
14	R2	All MCs	228	1.0	228	1.0	0.369	11.0	LOS B	1.7	42.0	0.70	0.70	0.82	30.7
Approach			717	1.0	717	1.0	0.791	22.4	LOS C	7.4	185.9	0.84	1.00	1.51	26.7
West: Sheldon Road															
5	L2	All MCs	127	1.0	127	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.1
2	T1	All MCs	377	1.0	377	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.6
12	R2	All MCs	170	1.0	170	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.4
Approach			674	1.0	674	1.0	0.616	11.4	LOS B	5.6	140.8	0.81	0.81	1.23	30.5
All Vehicles			2783	1.0	2783	1.0	0.791	18.6	LOS C	10.3	259.1	0.87	0.98	1.56	27.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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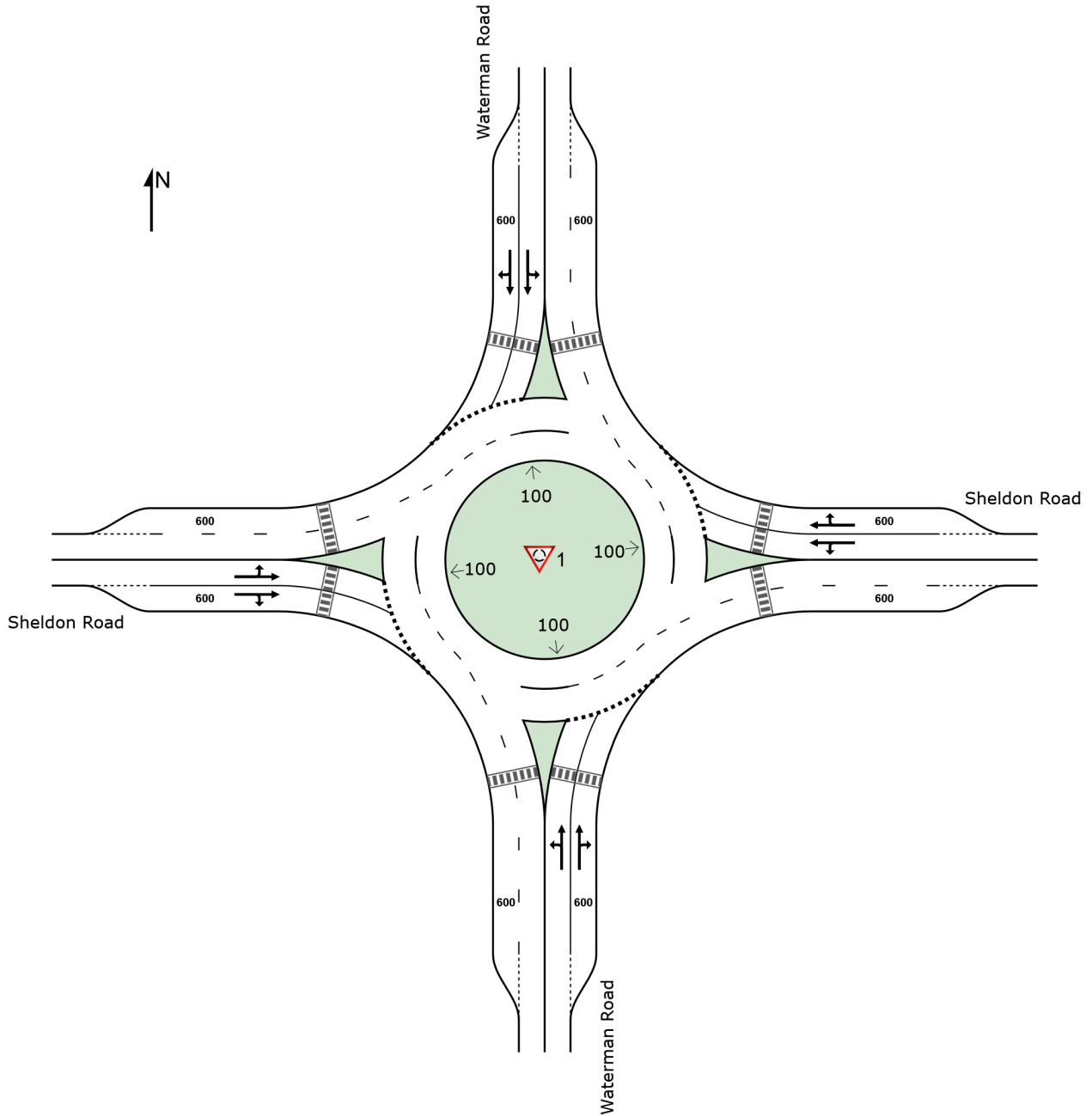
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SITE LAYOUT

 Site: 1 [Waterman & Sheldon - Improvement (Site Folder: CNP with Improvements)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour - Improvement
(Site Folder: CNP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: Waterman Road															
3	L2	All MCs	211	2.0	211	2.0	0.428	7.9	LOS A	2.3	58.7	0.60	0.50	0.69	30.9
8	T1	All MCs	589	2.0	589	2.0	0.428	10.5	LOS B	2.3	58.7	0.59	0.48	0.67	32.2
18	R2	All MCs	168	2.0	168	2.0	0.428	11.4	LOS B	2.3	57.4	0.58	0.47	0.65	32.4
Approach			968	2.0	968	2.0	0.428	10.1	LOS B	2.3	58.7	0.59	0.48	0.67	31.9
East: Sheldon Road															
1	L2	All MCs	189	2.0	189	2.0	0.722	24.6	LOS C	5.3	133.7	0.84	1.07	1.65	25.2
6	T1	All MCs	600	2.0	600	2.0	0.722	27.6	LOS D	5.4	137.6	0.84	1.06	1.64	26.4
16	R2	All MCs	63	2.0	63	2.0	0.722	27.6	LOS D	5.4	137.6	0.84	1.06	1.64	26.7
Approach			853	2.0	853	2.0	0.722	27.0	LOS D	5.4	137.6	0.84	1.06	1.64	26.2
North: Waterman Road															
7	L2	All MCs	42	2.0	42	2.0	0.853	41.0	LOS E	7.6	193.7	0.92	1.30	2.23	21.7
4	T1	All MCs	611	2.0	611	2.0	0.853	42.2	LOS E	8.0	202.3	0.91	1.30	2.23	22.3
14	R2	All MCs	211	2.0	211	2.0	0.853	44.5	LOS E	8.0	202.3	0.91	1.30	2.23	22.6
Approach			863	2.0	863	2.0	0.853	42.7	LOS E	8.0	202.3	0.91	1.30	2.23	22.3
West: Sheldon Road															
5	L2	All MCs	147	2.0	147	2.0	0.486	12.3	LOS B	2.6	65.8	0.72	0.76	1.02	29.2
2	T1	All MCs	347	2.0	347	2.0	0.486	13.6	LOS B	2.6	66.3	0.71	0.75	1.01	30.2
12	R2	All MCs	221	2.0	221	2.0	0.486	17.6	LOS C	2.6	66.3	0.71	0.74	0.99	30.7
Approach			716	2.0	716	2.0	0.486	14.6	LOS B	2.6	66.3	0.71	0.75	1.01	30.1
All Vehicles			3400	2.0	3400	2.0	0.853	23.5	LOS C	8.0	202.3	0.76	0.89	1.38	27.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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\Summer_Villas_CNP.sip9

MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon PM Peak Hour - Improvement
(Site Folder: CNP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				mph
South: Waterman Road															
3u	U	All MCs	2	1.0	2	1.0	0.517	11.3	LOS B	3.4	86.1	0.70	0.70	1.00	29.5
3	L2	All MCs	204	1.0	204	1.0	0.517	11.3	LOS B	3.4	86.1	0.70	0.70	1.00	29.5
8	T1	All MCs	516	1.0	516	1.0	0.517	13.3	LOS B	3.4	86.5	0.69	0.68	0.99	30.7
18	R2	All MCs	183	1.0	183	1.0	0.517	15.0	LOS B	3.4	86.5	0.68	0.67	0.98	31.0
Approach			905	1.0	905	1.0	0.517	13.2	LOS B	3.4	86.5	0.69	0.68	0.99	30.5
East: Sheldon Road															
1	L2	All MCs	215	1.0	215	1.0	0.564	14.7	LOS B	3.5	87.8	0.76	0.85	1.19	28.2
6	T1	All MCs	559	1.0	559	1.0	0.564	18.4	LOS C	3.5	89.3	0.75	0.83	1.18	29.7
16	R2	All MCs	32	1.0	32	1.0	0.564	17.8	LOS C	3.5	89.3	0.75	0.83	1.17	29.9
Approach			806	1.0	806	1.0	0.564	17.4	LOS C	3.5	89.3	0.75	0.84	1.18	29.3
North: Waterman Road															
7	L2	All MCs	43	1.0	43	1.0	0.817	35.2	LOS E	7.0	177.4	0.89	1.23	2.03	23.0
4	T1	All MCs	602	1.0	602	1.0	0.817	36.4	LOS E	7.3	185.2	0.89	1.22	2.03	23.6
14	R2	All MCs	226	1.0	226	1.0	0.817	38.7	LOS E	7.3	185.2	0.89	1.22	2.04	23.9
Approach			871	1.0	871	1.0	0.817	36.9	LOS E	7.3	185.2	0.89	1.22	2.03	23.6
West: Sheldon Road															
5	L2	All MCs	129	1.0	129	1.0	0.383	7.9	LOS A	1.8	45.8	0.65	0.61	0.76	31.1
2	T1	All MCs	441	1.0	441	1.0	0.383	9.7	LOS A	1.8	45.8	0.64	0.60	0.75	32.2
12	R2	All MCs	204	1.0	204	1.0	0.383	13.4	LOS B	1.8	45.4	0.63	0.58	0.73	32.4
Approach			774	1.0	774	1.0	0.383	10.4	LOS B	1.8	45.8	0.64	0.59	0.75	32.0
All Vehicles			3357	1.0	3357	1.0	0.817	19.7	LOS C	7.3	185.2	0.75	0.84	1.25	28.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Summer_Villas_CNP.sip9

SITE LAYOUT

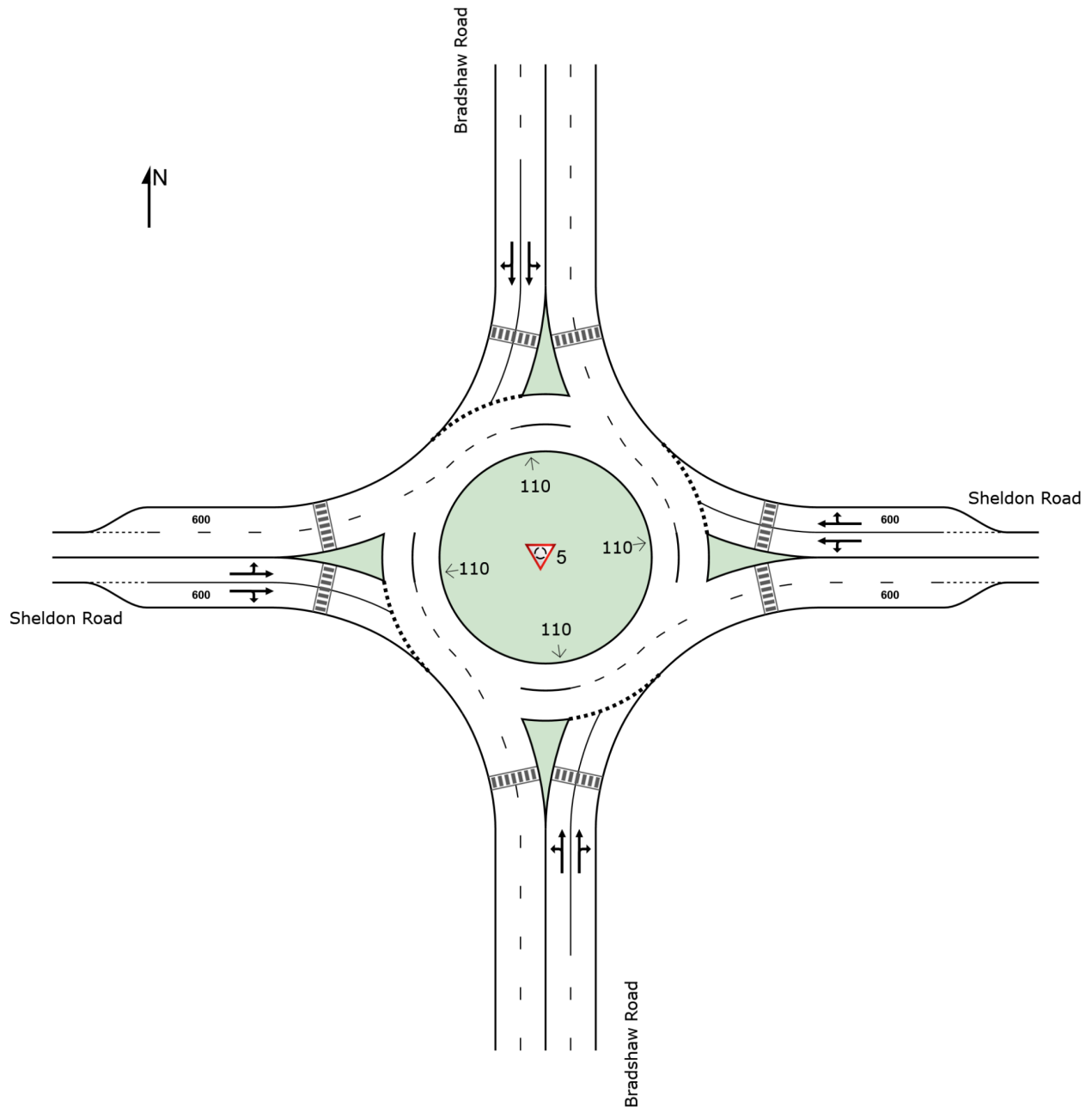
 **Site: 5 [Bradshaw & Sheldon - Improvement (Site Folder: CNP with Improvements)]**

New Site

Site Category: (None)

Roundabout

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\5_Cumulative No Project
\Summer_Villas_CNP.sip9

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour - Improvement
(Site Folder: CNP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	226	3.0	226	3.0	0.755	14.7	LOS B	11.3	288.6	0.86	0.95	1.63	28.8
8	T1	All MCs	1548	3.0	1548	3.0	0.755	14.3	LOS B	11.6	297.2	0.85	0.94	1.62	29.7
18	R2	All MCs	183	3.0	183	3.0	0.755	17.6	LOS C	11.6	297.2	0.85	0.93	1.60	29.8
Approach			1957	3.0	1957	3.0	0.755	14.7	LOS B	11.6	297.2	0.86	0.94	1.62	29.6
East: Sheldon Road															
1	L2	All MCs	215	3.0	215	3.0	1.045	120.0	LOS F	9.1	232.9	1.00	1.62	3.58	12.3
6	T1	All MCs	226	3.0	226	3.0	1.045	117.3	LOS F	9.8	251.1	1.00	1.70	3.86	13.1
16	R2	All MCs	32	3.0	32	3.0	1.045	116.9	LOS F	9.8	251.1	1.00	1.70	3.86	13.1
Approach			473	3.0	473	3.0	1.045	118.5	LOS F	9.8	251.1	1.00	1.66	3.73	12.7
North: Bradshaw Road															
7	L2	All MCs	48	3.0	48	3.0	0.771	16.5	LOS C	10.6	270.4	0.89	1.05	1.79	28.5
4	T1	All MCs	1333	3.0	1333	3.0	0.771	16.1	LOS C	10.9	280.3	0.89	1.04	1.78	29.2
14	R2	All MCs	462	3.0	462	3.0	0.771	21.8	LOS C	10.9	280.3	0.88	1.03	1.77	29.1
Approach			1844	3.0	1844	3.0	0.771	17.5	LOS C	10.9	280.3	0.89	1.04	1.78	29.1
West: Sheldon Road															
5	L2	All MCs	290	3.0	290	3.0	0.691	27.7	LOS D	3.1	80.5	0.88	1.04	1.46	23.9
2	T1	All MCs	183	3.0	183	3.0	0.691	33.9	LOS D	3.1	80.5	0.89	1.05	1.47	24.4
12	R2	All MCs	97	3.0	97	3.0	0.691	31.6	LOS D	3.1	78.2	0.89	1.05	1.47	24.3
Approach			570	3.0	570	3.0	0.691	30.3	LOS D	3.1	80.5	0.89	1.04	1.46	24.1
All Vehicles			4844	3.0	4844	3.0	1.045	27.7	LOS D	11.6	297.2	0.88	1.06	1.87	25.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour - Improvement
(Site Folder: CNP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh ft		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Bradshaw Road															
3	L2	All MCs	69	3.0	69	3.0	0.780	20.8	LOS C	9.9	253.4	0.90	1.09	1.84	27.0
8	T1	All MCs	1172	3.0	1172	3.0	0.780	20.2	LOS C	10.3	262.5	0.90	1.08	1.84	27.7
18	R2	All MCs	161	3.0	161	3.0	0.780	23.6	LOS C	10.3	262.5	0.89	1.07	1.83	27.8
Approach			1402	3.0	1402	3.0	0.780	20.6	LOS C	10.3	262.5	0.90	1.08	1.84	27.7
East: Sheldon Road															
1	L2	All MCs	69	3.0	69	3.0	1.312	232.2	LOS F	19.0	486.7	1.00	2.06	5.40	7.8
6	T1	All MCs	322	3.0	322	3.0	1.312	227.7	LOS F	22.2	569.0	1.00	2.17	5.83	8.0
16	R2	All MCs	46	3.0	46	3.0	1.312	220.3	LOS F	22.2	569.0	1.00	2.25	6.11	8.1
Approach			437	3.0	437	3.0	1.312	227.7	LOS F	22.2	569.0	1.00	2.16	5.79	7.9
North: Bradshaw Road															
7	L2	All MCs	52	3.0	52	3.0	0.713	12.5	LOS B	10.7	274.4	0.77	0.74	1.28	30.0
4	T1	All MCs	1391	3.0	1391	3.0	0.713	12.3	LOS B	10.8	277.1	0.77	0.73	1.27	30.7
14	R2	All MCs	517	3.0	517	3.0	0.713	17.8	LOS C	10.8	277.1	0.75	0.71	1.24	30.5
Approach			1960	3.0	1960	3.0	0.713	13.7	LOS B	10.8	277.1	0.76	0.73	1.26	30.6
West: Sheldon Road															
5	L2	All MCs	218	3.0	218	3.0	0.804	41.1	LOS E	4.4	113.5	0.93	1.18	1.87	21.2
2	T1	All MCs	310	3.0	310	3.0	0.804	41.1	LOS E	4.6	118.6	0.92	1.18	1.87	22.5
12	R2	All MCs	149	3.0	149	3.0	0.804	36.9	LOS E	4.6	118.6	0.92	1.18	1.86	22.8
Approach			678	3.0	678	3.0	0.804	40.2	LOS E	4.6	118.6	0.92	1.18	1.87	22.1
All Vehicles			4477	3.0	4477	3.0	1.312	40.8	LOS E	22.2	569.0	0.85	1.05	1.97	22.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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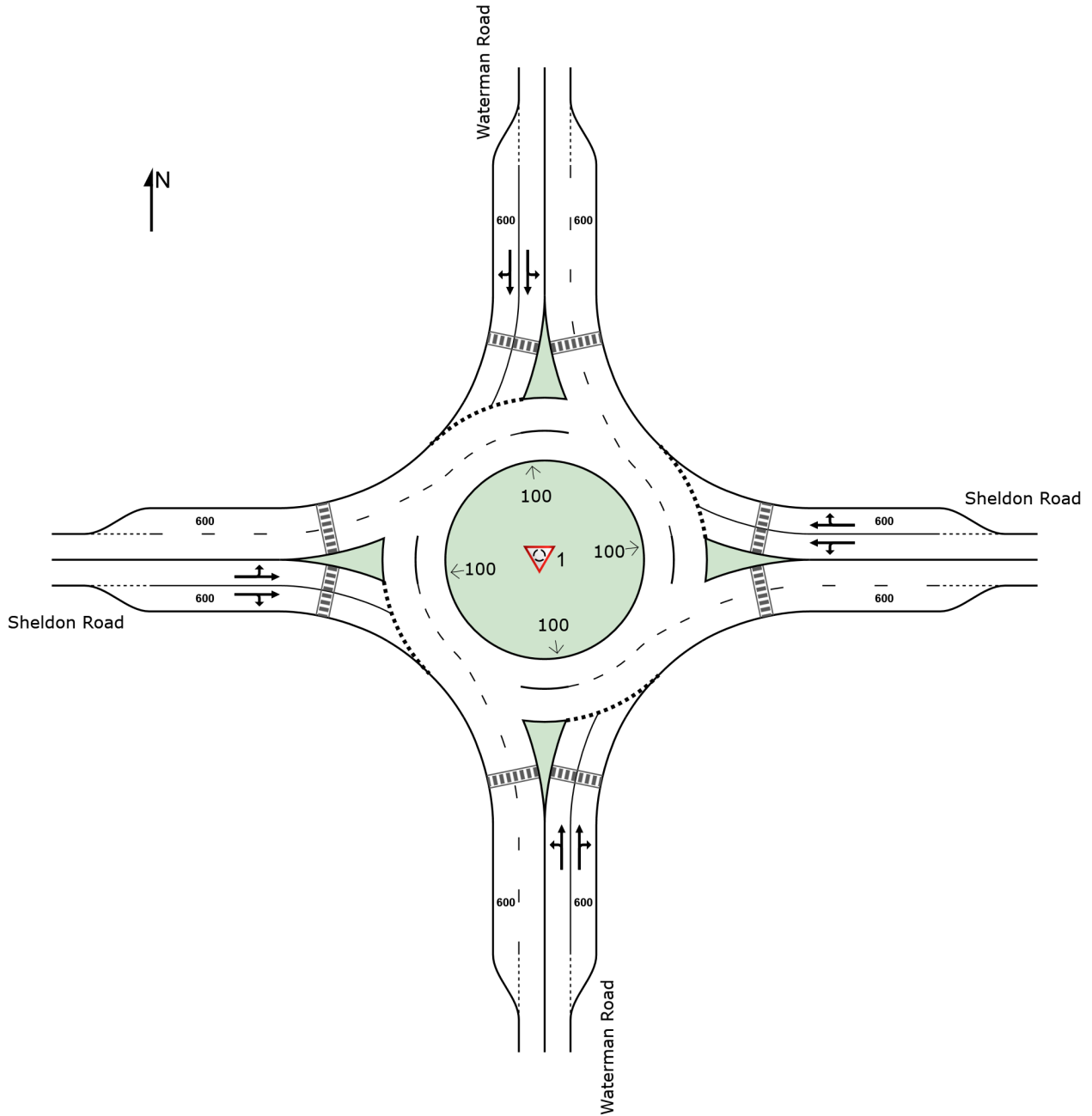
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\Summer_Villas_CNP.sip9

SITE LAYOUT

 Site: 1 [Waterman & Sheldon - Improvement (Site Folder: CPP with Improvements)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

 **Site: 1 [Waterman & Sheldon AM Peak Hour - Improvement
(Site Folder: CPP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] veh ft		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Waterman Road															
3	L2	All MCs	221	2.0	221	2.0	0.446	8.2	LOS A	2.5	64.7	0.62	0.53	0.75	30.7
8	T1	All MCs	600	2.0	600	2.0	0.446	11.0	LOS B	2.5	64.7	0.61	0.51	0.73	32.0
18	R2	All MCs	177	2.0	177	2.0	0.446	11.8	LOS B	2.5	63.7	0.60	0.50	0.71	32.3
Approach			998	2.0	998	2.0	0.446	10.5	LOS B	2.5	64.7	0.61	0.51	0.73	31.8
East: Sheldon Road															
1	L2	All MCs	211	2.0	211	2.0	0.834	34.8	LOS D	7.8	198.5	0.90	1.27	2.18	22.7
6	T1	All MCs	662	2.0	662	2.0	0.834	37.7	LOS E	8.1	206.8	0.91	1.27	2.18	23.7
16	R2	All MCs	94	2.0	94	2.0	0.834	37.4	LOS E	8.1	206.8	0.91	1.27	2.19	24.0
Approach			966	2.0	966	2.0	0.834	37.0	LOS E	8.1	206.8	0.91	1.27	2.18	23.5
North: Waterman Road															
7	L2	All MCs	47	2.0	47	2.0	0.942	59.3	LOS F	10.4	263.3	0.97	1.53	2.97	18.5
4	T1	All MCs	613	2.0	613	2.0	0.942	60.2	LOS F	11.0	279.1	0.97	1.54	2.99	19.0
14	R2	All MCs	211	2.0	211	2.0	0.942	62.4	LOS F	11.0	279.1	0.97	1.56	3.03	19.2
Approach			871	2.0	871	2.0	0.942	60.7	LOS F	11.0	279.1	0.97	1.54	3.00	19.0
West: Sheldon Road															
5	L2	All MCs	147	2.0	147	2.0	0.506	13.0	LOS B	2.7	69.4	0.73	0.79	1.06	29.0
2	T1	All MCs	357	2.0	357	2.0	0.506	14.4	LOS B	2.8	70.2	0.73	0.78	1.05	30.0
12	R2	All MCs	223	2.0	223	2.0	0.506	18.4	LOS C	2.8	70.2	0.72	0.77	1.04	30.4
Approach			727	2.0	727	2.0	0.506	15.4	LOS C	2.8	70.2	0.73	0.78	1.05	29.9
All Vehicles			3562	2.0	3562	2.0	0.942	31.0	LOS D	11.0	279.1	0.80	1.03	1.74	25.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

MOVEMENT SUMMARY

 **Site: 101 [Waterman & Sheldon PM Peak Hour - Improvement
(Site Folder: CPP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Waterman Road															
3	L2	All MCs	208	1.0	208	1.0	0.736	18.3	LOS C	7.8	196.3	0.85	1.01	1.66	27.3
8	T1	All MCs	519	1.0	519	1.0	0.736	17.3	LOS C	7.8	196.3	0.82	0.94	1.50	28.4
18	R2	All MCs	198	1.0	198	1.0	0.373	13.4	LOS B	1.7	44.0	0.64	0.60	0.75	31.6
Approach			925	1.0	925	1.0	0.736	16.7	LOS C	7.8	196.3	0.79	0.88	1.37	28.8
East: Sheldon Road															
1	L2	All MCs	223	1.0	223	1.0	0.776	22.9	LOS C	7.6	190.7	0.88	1.12	1.83	25.9
6	T1	All MCs	581	1.0	581	1.0	0.776	20.5	LOS C	7.6	190.7	0.81	0.96	1.46	28.0
16	R2	All MCs	43	1.0	43	1.0	0.393	14.3	LOS B	1.8	45.8	0.69	0.70	0.86	31.0
Approach			846	1.0	846	1.0	0.776	20.8	LOS C	7.6	190.7	0.82	0.98	1.52	27.5
North: Waterman Road															
7	L2	All MCs	71	1.0	71	1.0	1.142	107.5	LOS F	35.1	885.2	1.00	2.75	6.96	13.3
4	T1	All MCs	612	1.0	612	1.0	1.142	100.0	LOS F	35.1	885.2	0.98	2.58	6.44	14.1
14	R2	All MCs	226	1.0	226	1.0	0.578	25.7	LOS D	3.1	78.3	0.79	0.92	1.25	27.5
Approach			909	1.0	909	1.0	1.142	82.1	LOS F	35.1	885.2	0.94	2.18	5.19	15.9
West: Sheldon Road															
5	L2	All MCs	129	1.0	129	1.0	0.531	9.6	LOS A	3.5	87.1	0.70	0.71	1.01	30.7
2	T1	All MCs	498	1.0	498	1.0	0.531	9.7	LOS A	3.5	87.1	0.69	0.69	0.97	31.4
12	R2	All MCs	214	1.0	214	1.0	0.269	11.4	LOS B	1.1	27.0	0.59	0.52	0.59	32.9
Approach			841	1.0	841	1.0	0.531	10.1	LOS B	3.5	87.1	0.67	0.65	0.88	31.7
All Vehicles			3520	1.0	3520	1.0	1.142	33.0	LOS D	35.1	885.2	0.81	1.19	2.28	24.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

SITE LAYOUT

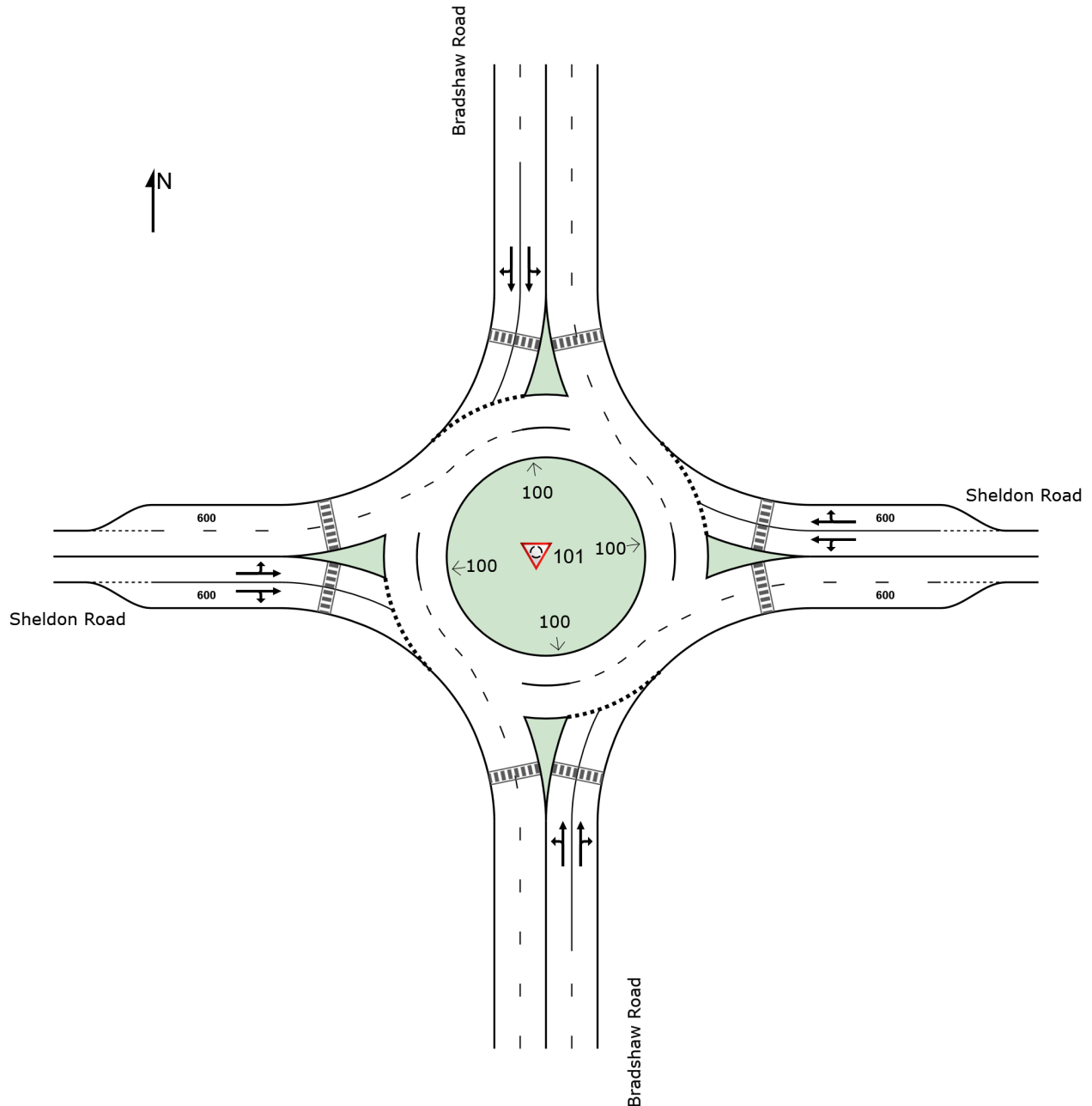
 Site: 5 [Bradshaw & Sheldon - Improvement (Site Folder: CPP with Improvements)]

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
\Summer_Villas_.sip9

MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon AM Peak Hour - Improvement
(Site Folder: CPP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				mph
South: Bradshaw Road															
3	L2	All MCs	226	3.0	226	3.0	0.771	15.7	LOS C	11.7	298.9	0.89	1.00	1.73	28.3
8	T1	All MCs	1548	3.0	1548	3.0	0.771	15.2	LOS C	12.1	308.9	0.88	0.99	1.71	29.2
18	R2	All MCs	183	3.0	183	3.0	0.771	18.5	LOS C	12.1	308.9	0.87	0.98	1.70	29.3
Approach			1957	3.0	1957	3.0	0.771	15.6	LOS C	12.1	308.9	0.88	0.99	1.71	29.1
East: Sheldon Road															
1	L2	All MCs	215	3.0	215	3.0	1.064	126.5	LOS F	9.8	252.0	1.00	1.67	3.78	11.9
6	T1	All MCs	227	3.0	227	3.0	1.064	123.7	LOS F	10.7	273.9	1.00	1.76	4.11	12.6
16	R2	All MCs	32	3.0	32	3.0	1.064	123.6	LOS F	10.7	273.9	1.00	1.76	4.11	12.6
Approach			474	3.0	474	3.0	1.064	124.9	LOS F	10.7	273.9	1.00	1.72	3.96	12.3
North: Bradshaw Road															
7	L2	All MCs	48	3.0	48	3.0	0.769	16.3	LOS C	10.5	269.9	0.89	1.04	1.78	28.5
4	T1	All MCs	1333	3.0	1333	3.0	0.769	15.9	LOS C	10.9	279.5	0.88	1.03	1.77	29.1
14	R2	All MCs	466	3.0	466	3.0	0.769	21.7	LOS C	10.9	279.5	0.88	1.02	1.75	29.1
Approach			1847	3.0	1847	3.0	0.769	17.4	LOS C	10.9	279.5	0.88	1.03	1.77	29.1
West: Sheldon Road															
5	L2	All MCs	310	3.0	310	3.0	0.725	30.1	LOS D	3.5	88.9	0.89	1.07	1.55	23.3
2	T1	All MCs	191	3.0	191	3.0	0.725	36.7	LOS E	3.5	88.9	0.90	1.08	1.56	23.7
12	R2	All MCs	99	3.0	99	3.0	0.725	34.2	LOS D	3.4	86.1	0.90	1.08	1.56	23.5
Approach			600	3.0	600	3.0	0.725	32.9	LOS D	3.5	88.9	0.90	1.07	1.55	23.4
All Vehicles			4878	3.0	4878	3.0	1.064	29.0	LOS D	12.1	308.9	0.89	1.09	1.93	25.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\fpbox\Box\Projects\SA-Projects\SA23\0206.00_Elk_Grove_Summer_Villas_EIR\Analysis\Sidra\6_Cumulative Plus Project
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MOVEMENT SUMMARY

 **Site: 5 [Bradshaw & Sheldon PM Peak Hour - Improvement
(Site Folder: CPP with Improvements)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: Bradshaw Road															
3	L2	All MCs	71	3.0	71	3.0	0.789	21.5	LOS C	10.1	259.0	0.91	1.11	1.89	26.6
8	T1	All MCs	1172	3.0	1172	3.0	0.789	20.9	LOS C	10.5	268.6	0.91	1.10	1.88	27.3
18	R2	All MCs	161	3.0	161	3.0	0.789	24.3	LOS C	10.5	268.6	0.90	1.09	1.88	27.4
Approach			1405	3.0	1405	3.0	0.789	21.3	LOS C	10.5	268.6	0.91	1.10	1.88	27.3
East: Sheldon Road															
1	L2	All MCs	69	3.0	69	3.0	1.347	246.1	LOS F	20.5	524.7	1.00	2.12	5.65	7.4
6	T1	All MCs	330	3.0	330	3.0	1.347	241.8	LOS F	23.9	611.6	1.00	2.24	6.10	7.6
16	R2	All MCs	46	3.0	46	3.0	1.347	234.4	LOS F	23.9	611.6	1.00	2.32	6.41	7.7
Approach			445	3.0	445	3.0	1.347	241.7	LOS F	23.9	611.6	1.00	2.23	6.07	7.6
North: Bradshaw Road															
7	L2	All MCs	52	3.0	52	3.0	0.720	12.7	LOS B	11.1	284.4	0.78	0.76	1.31	29.8
4	T1	All MCs	1391	3.0	1391	3.0	0.720	12.5	LOS B	11.2	287.6	0.77	0.75	1.30	30.4
14	R2	All MCs	536	3.0	536	3.0	0.720	18.2	LOS C	11.2	287.6	0.76	0.73	1.27	30.3
Approach			1978	3.0	1978	3.0	0.720	14.0	LOS B	11.2	287.6	0.77	0.74	1.29	30.4
West: Sheldon Road															
5	L2	All MCs	225	3.0	225	3.0	0.817	42.6	LOS E	4.6	118.4	0.93	1.20	1.92	20.9
2	T1	All MCs	314	3.0	314	3.0	0.817	42.6	LOS E	4.8	123.8	0.92	1.20	1.92	22.1
12	R2	All MCs	151	3.0	151	3.0	0.817	38.3	LOS E	4.8	123.8	0.92	1.19	1.92	22.5
Approach			690	3.0	690	3.0	0.817	41.6	LOS E	4.8	123.8	0.92	1.20	1.92	21.8
All Vehicles			4517	3.0	4517	3.0	1.347	42.9	LOS E	23.9	611.6	0.86	1.07	2.04	21.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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